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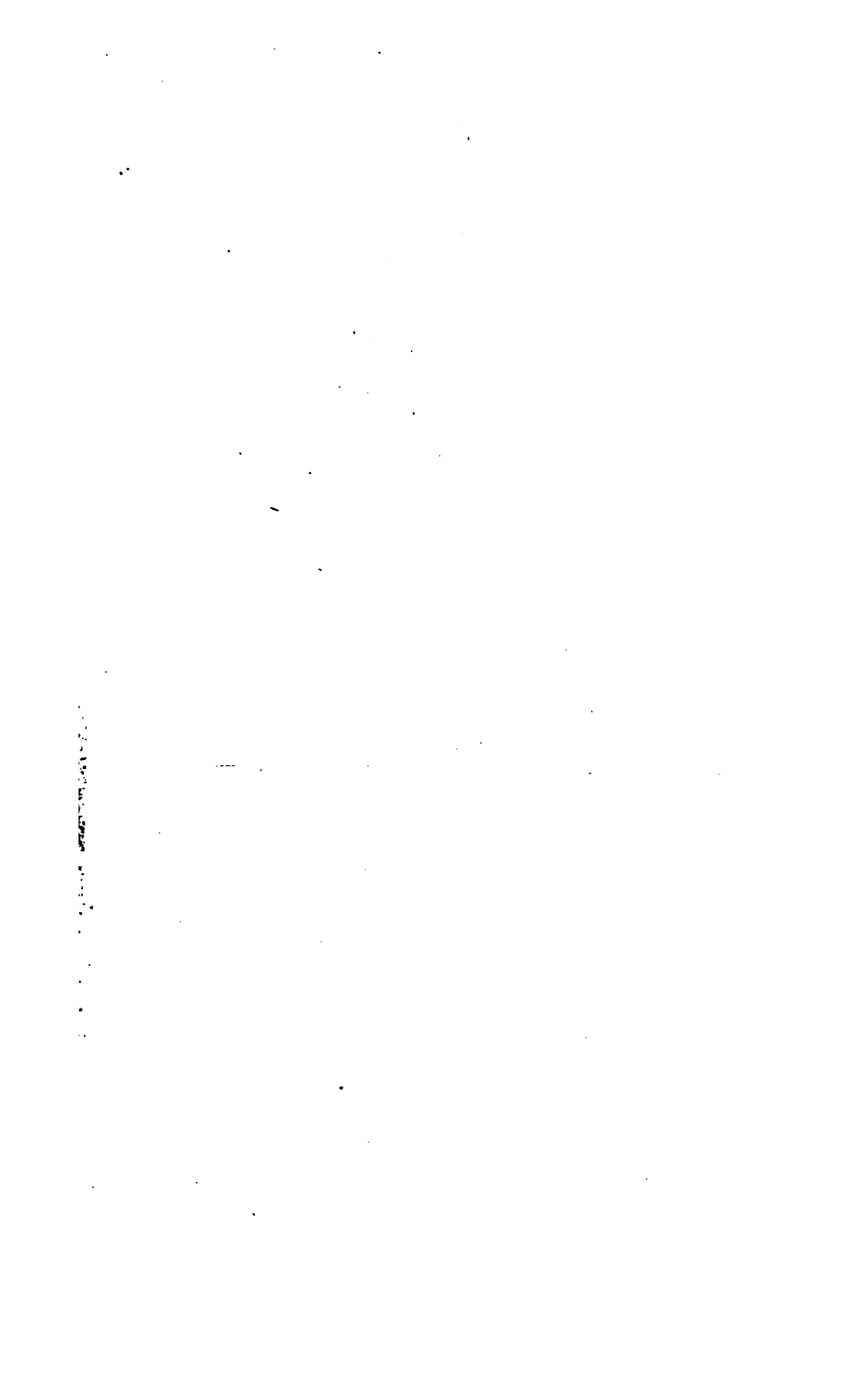
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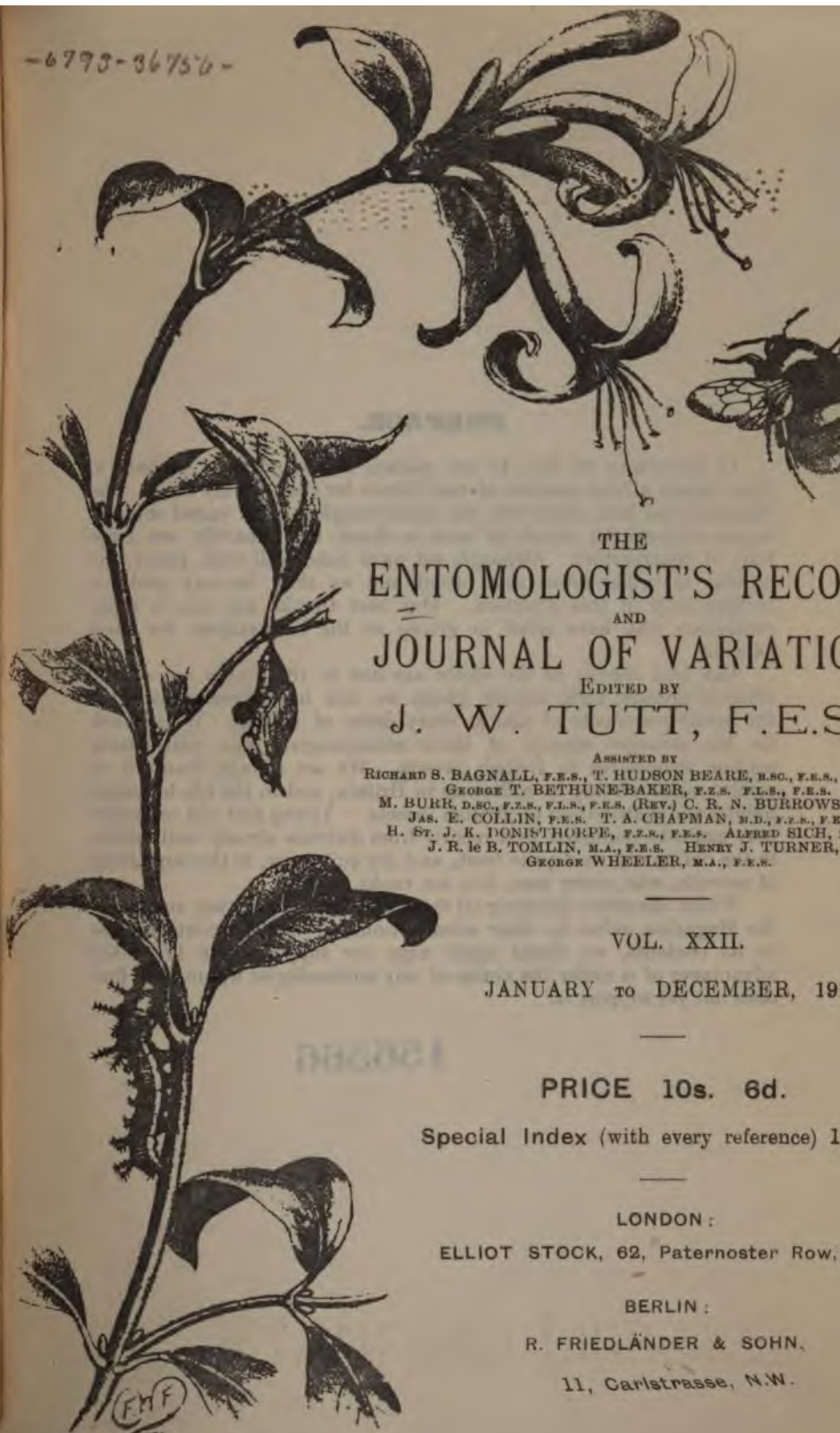








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AND  
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## PREFACE.

In presenting vol. xxii. to our readers and subscribers, we have to thank again a large number of our friends for their kindly help. The Magazine has been filled with the usual complement of varied entomological subjects, for which we have to thank, most heartily, our large body of contributors. Although we have done well with plates, the number is rather fewer than usual, and we shall be very glad for further help in this direction. Our best thanks are due to those gentlemen who have aided in giving us the illustrations for their papers.

The best thanks of the editor are due to the kindly aid of the efficient editorial staff, among whom we now have representatives of the leading students of almost every order of insects. We still ask for the stronger support of those entomologists who particularly confine themselves to British insects. We are always thankful to receive notes relating to collecting in Britain, and to the life-histories, habits, and distribution of British insects. Young and old collectors may again be reminded that reports from districts already well known to the old hands, read quite fresh, and are quite new, to the large body of recruits, who, every year, join our ranks.

Whilst therefore thanking all those who have in any way supported the Magazine, either by their subscriptions, or by their contributions to its contents, we would again urge our supporters to bring the advantages of it under the notice of any entomologist whom they find does not yet support it.

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Del. T. Reuss.



# The Entomologist's Record

AND

## JOURNAL OF VARIATION.

VOL. XXII. No. 1.

JANUARY 15TH, 1910.

### Retrospect of a Coleopterist for 1909.

By (Prof.) T. HUDSON BEARE, B.Sc., F.R.S.E., F.E.S.

The additions to our list which I had the pleasure of recording last year were more numerous than they had been for many years. In view of this, one might expect that there would be a lull in the outburst of activity this year, but the following records will show that the output of the present year has been quite equal to that of the preceding one. It will be necessary, therefore, for me to condense the remarks I have to make in regard to the various additions which are to be chronicled. A few general remarks must be made, however, before I begin to record the various additions. First of all, it is necessary to point out that no fewer than seven of this year's additions are new to science; moreover, we have, for the first time for many years, to note the addition of a new Buprestid to our scanty list of insects belonging to this family. In regard to some of this year's additions, there will be differences of opinion. We have undoubtedly entered upon an era of "species-splitting," if I may use such an expression. With our present scanty knowledge of the life-history of the majority of beetles, this creation of new species, based generally upon obscure structural differences, differences moreover which are, as a rule, only comparative, is in my view of little real service to science. It is to be observed that this splitting into species is resorted to only in the case of insects which are so minute that they have to be examined under a fairly high-power microscope before the supposed structural differences can be detected; in the case of insects of comparatively large bulk, differences far more easily observable are either never noticed, or, if they are noted, no one dreams of proposing to divide into different species insects showing such differences.

*Laccobius scutellaris*, Motsch.—Introduced by Dr. Sharp, *Ent. Mo. Mag.*, xlv., p. 217. A specimen was taken at Chobham as far back as 1878 by Mr. Champion, and Dr. Sharp has himself recently captured specimens at Brockenhurst; it is most nearly allied to *sinuatus*, Motsch., but is much darker in colour.

*Anacaena ovata*, Reiche.—Mr. J. Edwards says (*loc. cit.*, p. 169) that he can satisfactorily separate the insects so far known as *limbata*, F., into two distinct forms, and the lighter in colour of these two forms is the above species. In the latest European Catalogue, and by Ganglbauer, *ovata* is considered a synonym of *limbata*. The whole question turns upon what constitutes a claim to specific rank.

*Ocyusa defecta*, Muls. et Rey.—Introduced by Mr. E. A. Newbery (*loc. cit.*, p. 150) on a specimen taken at Tiverton, Devon, by Mr. S. G. Rendel, in November, 1908; it is most nearly allied to *O. maura*, Er.

*Calodera rufescens*, Kraatz.—Introduced by Mr. G. C. Champion (*loc. cit.*, p. 52) on specimens taken at Sandown, Isle of Wight, and at Colchester. It is allied to *C. riparia*, Er.

*Homalota scotica*, sp. n.—Described (*Ent. Rec.*, xxi., p. 33) by Mr. E. G. Elliman from specimens taken by Mr. Donisthorpe and the writer out of flood refuse on the banks of the Spey at Nethy Bridge, in September, 1908.

*Homalota parens*, Muls. et Rey.—Introduced by Mr. G. C. Champion (*Ent. Mo. Mag.*, xlv., p. 5) on a specimen taken near Guildford. It has the general facies of *H. melanaria*, Man., but is not nearly so large, and has much shorter antennæ.

*Homalota fussi*, Bernh.=*nitens*, Füss.—Introduced by Mr. G. C. Champion (*loc. cit.*, p. 31) on a specimen taken at Mickleham in 1875; it has much the general appearance of a *Placusa*.

*Myrmecopora brevipennis*, sp. n.—Described by Mr. E. A. Butler (*loc. cit.*, p. 29) from specimens taken at Tintagel, Plymouth, etc. It differs from *M. uvida*, Er., in its proportionately shorter antennæ and legs; it is a less robust insect.

*Epipeda nigricans*, Thoms.—Introduced by Dr. Joy (*loc. cit.*, p. 268), on two specimens taken under pine bark at Blair Atholl, Perthshire, on September 5th, 1909.

*Lathrobium dilutum*, Erichs.—This species was also introduced by Dr. Joy (*loc. cit.*, p. 268) on specimens found under stones on the shore of Loch Erich, and in flood refuse on the river Truim, in September and October, 1909.

*Bledius denticollis*, Fauv.—Introduced by Mr. F. H. Fryer (*loc. cit.*, p. 6) on specimens taken on the banks of the Nethy at Nethy Bridge. Dr. Sharp also took it at the same place. It is very like *B. opacus*, Block., but is distinguishable by the right-angled tooth-like projecting hind angles of the thorax.

*Thinobius pallidus*, sp. n.—Described (*loc. cit.*, p. 4) by Mr. E. A. Newbery from specimens taken by Mr. Britten under stones at the side of the river Eden, Great Salkeld, Cumberland. It may be known by its entirely testaceous colour, and the structure of the antennæ.

*Homalium brevicolle*, Thoms.—Introduced by Dr. Joy (*loc. cit.*, p. 102) on a specimen taken in carrion at Great Salkeld by Mr. Britten; it comes near to *exiguum*, Gyll. Dr. Sharp was of opinion (*loc. cit.*, p. 135) that the correct name was *H. foraminosum*, Mäklin, but he later (p. 214) abandoned this idea; he had captured the insect in Scotland.

*Proteinus crenulatus*, Pandellé.—Introduced by Dr. Sharp (*loc. cit.*, p. 267) on specimens found at Nethy Bridge; it is like *P. brachypterus*, F., but is blacker and more shining, and the base of the antennæ is not clear red.

*Scydmaenus barnevillei*, Reitt.—Dr. Joy introduced (*loc. cit.*, p. 54) this species on specimens taken out of cormorants' and gulls' nests from the Scilly Isles. The identification was confirmed by Reitter, who was of opinion that *barnevillei* was a synonym of *poweri*, Fow. Dr. Joy says this is not so. It may be mentioned that the latest European Catalogue treats *poweri* as a synonym of *scutellaris*, Müll.

*Euplectus anbeanus*, Reitt.—In an article on our so-called species



*E. kunzei*, Aubé, and *E. duponti*, Aubé (*loc. cit.*, p. 74), Mr. Champion showed that all our specimens standing under the name *kunzei* were really *aubeanus*, Reitt., and this name must, therefore, be added to our list. The name *kunzei*, or rather *brunneus*, Grimmer, of which *kunzei* is only a synonym, remains in our list, because some of the specimens hitherto called *duponti* have been incorrectly determined; they are *brunneus*, Grimmer.

*Micropeplus caelatus*, Erics.—Introduced by Dr. Joy and Mr. Tomlin (*loc. cit.*, p. 149) on specimens taken at Cloughane, Co. Kerry, in April, 1909. It is most nearly allied to *M. porcatius*, Payk.

*Riolus (Elmis) sodalis*, Er.—Introduced by Mr. J. Edwards (*loc. cit.*, p. 76) on a specimen taken at Christow, Devon, by Mr. Champion; Mr. Edwards gave a table for separating our four species of this sub-genus.

*Parnus griseus*, Er.—Introduced by Dr. Sharp (*loc. cit.*, p. 123), who stated that he considered that we had now seven indigenous species of this genus.

*Parnus (Dryops) anglicanus*, sp. n.—Described by Mr. J. Edwards (*loc. cit.*, p. 218) on specimens taken at Horning in May, 1888, and again in 1909. Mr. Edwards gave a drawing of the vertical aspect of the œdeagus to show the difference between it and that of *auriculatus*, Fourc.

*Aphodius niger*, Panz.—Dr. Sharp reinstated this species in the British list (*loc. cit.*, p. 129) on the strength of a specimen taken at Brockenhurst, and Mr. Champion has since that date taken the species freely at the same locality. In discussing the previous records of this species as a British insect, Dr. Sharp expressed the opinion that they were all erroneous; he also stated that he had two specimens, one taken at Deal, and one in the New Forest, which did not agree with *niger*, Panz., or with the immaculate ab. of *plagiatus*.

*Melanophila acuminata*, De G.—Introduced by Mr. Champion (*loc. cit.*, p. 247) on specimens taken in the pine-woods near Woking, in August and September, 1909; this fine Buprestid is a most unlooked-for addition to our list, and the most interesting of the year's captures. Mr. Champion gave an account of all the beetles he had taken in these pine-woods, including such insects as *Crioccephalus fesus*, Muls., and *Anchomenus quadripunctatus*, De G.

*Chaetocnema arida*, Foud.—Introduced by Mr. Donisthorpe (*Ent. Record*, xxi., p. 259) on specimens taken in the Whitefield Woods, Ryde, Isle of Wight, on August 26th, 1909. The species comes near to *hortensis*, Geof., but has a narrower thorax, and thorax and head are more finely punctured.

*Rabocerus (Salpingus) bishopi*, sp. n.—Described by Dr. Sharp (*Ent. Mo. Mag.*, xlv., p. 245) from specimens taken at Grantown, Speyside, by himself and Mr. T. G. Bishop.

In the same article, Dr. Sharp described another European species new to science, *R. championi*, from specimens taken in Switzerland by Mr. Champion.

*Anaspis hudsoni*, sp. n.—Described by Mr. Donisthorpe (*Ent. Record*, xxi., p. 60) from a specimen found at Nethy Bridge in the centre of a hard, woody fungus, on Scots fir, on September 16th, 1908. The article is illustrated by a plate showing the male appendages of the whole of the British species of the genus.

*Pityogenes trepanatus*, Noerdl.—Introduced by Dr. Joy (*Ent. Mo. Mag.*, xlv., p. 269) on a specimen swept up at Blair Atholl, Perthshire, on September 3rd, 1909.

*Euxechesops jordani*, sp. n.—This is an exotic insect found at Kew Gardens, new to science, and described by Mr. W. E. Sharp (*loc. cit.*, p. 221). It was introduced in a consignment of lily seeds from the Tanganyika district of Africa; it is a very remarkable and fine Anthribid.

*Diestota testacea*, Kraatz.—This insect was found by Mr. W. E. Sharp at Shirley, in the débris of decayed wood (*loc. cit.*, p. 269). It was first described from the East Indies. It appears to have become acclimatised in South Europe, and possibly may become so here; in the meantime it must go into the special list of known introduced insects.

The following new varieties and aberrations have been added:—*Trichopteryx intermedia* var. *thomsoni*, I. B. Ericson.—Introduced by Mr. Donisthorpe (*Ent. Record*, xxi., p. 58) on specimens taken by him and the writer at Newtonmore, in June, 1907.

*Coccinella 10-punctata* ab. *confluens*, Haworth.—This was also introduced by Mr. Donisthorpe (*loc. cit.*, p. 186); he captured a specimen at Darenth on May 16th, 1908.

*Sitaris muralis*, Forst. ab. *flava*, n. ab.—This new aberration was described by Mr. Hamm (*Ent. Mo. Mag.*, xlv., p. 277) on specimens taken at Oxford; it has the whole of the elytra, wing membrane, and abdomen clear yellow in colour.

*Cryptophagus pallidus* var. *argenteus*, n. var.—Dr. Joy exhibited this new variety at a meeting of the Entomological Society of London, on November 3rd (*loc. cit.*, p. 284); it differs from the type by having silvery pubescence.

We have thus an addition of 28 species and 4 varieties and aberrations: two, however, are introduced species, and one at least of the others is a somewhat doubtful species.

In view of the length of the above list of additions, I can only afford space for a brief notice of the capture of rare species during the year. Dr. Joy records *Olophrum consimile*, Gyll., from Ben Wyvis; Mr. Keys, *Anthicus angustatus*, Curt., from Bigbury Bay, in plenty; Mr. Butler, *Cathormiocerus maritimus*, Rye, from Tintagel (this insect has been found recently by Mr. C. J. C. Pool, in the old locality—Portsmouth); Mr. Day, *Meligethes subrugosus*, Gyll., from Cumberland; Mr. de la Garde, *Sibinia sodalis*, Germ., and *Cardiophorus equiseti*, Hbst., both in numbers from Branton; Commander Walker, *Trimium brevicorne*, Reich., from Cobham Park, and *Neuraphes rubicundus*, Schaum, from Strood (Mr. Collins has also taken it at Oxford); Mr. Cameron, *Emus hirtus*, L., from Sheppey, in fair numbers; Mr. Bedwell, *Heterius ferrugineus*, Ol., and *Cassida fastuosa*, Schall., from Box Hill, and what appears to be *Hypera meles*, F., from Coulsdon; Mr. Tomlin, *Tropideres sepicola*, F., and *Cionus longicollis*, Bris., from Harewood Forest. In conclusion, I may mention that Mr. Donisthorpe and the writer took *Trechus rivularis*, Gyll., at Wicken Fen in September.

Many interesting notes have appeared in our entomological journals. Mr. Newbery (*Ent. Mo. Mag.*, xlv., pp. 32 and 53), in his "Notes on various British Coleoptera," pointed out that our *Adrastus limbatus*, Fab., was now called on the continent *A. nitidulus*, Marsh,



and that the *Athous niger*, L., of our collections, was really *A. hirtus*, Hbst.; in the same article he gave some further characters for separating *Trachyploeus aristatus*, Gyll., and *T. squamulatus*, Ol., and also *Othius melanocephalus*, Grav., and *O. myrmecophilus*, Kies; he also again expressed the opinion that the insects we call *Melanotus castanipes*, Payk., are only large specimens of *M. rufipes*, Herbst. I must again express my disagreement with this view. In an interesting note entitled "On the *Miarus micros* of British Catalogues" (*loc. cit.*, p. 99), Mr. E. A. Butler adduced evidence to show that this species does occur in Great Britain, having been taken at Caterham, Mickleham, Box Hill, etc.; he thought it was possible we had another species (undescribed) coming very near to *M. micros*, but distinct from it. Mr. J. Edwards discussed in an article entitled "On the British species of *Chalcoides*, Foudras" (*loc. cit.*, p. 127), the synonymy of the five British species, and certainly, if we are to follow continental usage, we must change at least three of the names: *chloris*, Foudras, becomes *plutus*, Latr.; *smaragdina*, Foudr., becomes *fulvicornis*, Fab.; and *helkines*, Brit. Cat., becomes *aurea*, Geoff. Mr. Edwards gave a new table for separating the species (I personally have never found any difficulty in doing this with the aid of the table given by Canon Fowler), and mentioned most of the colour aberrations of the various species. Dr. Joy, in a paper "Notes on the male genitalia of *Anisotoma anglica*, Rye, and *Gnathoncus nidicola*, Joy" (*loc. cit.*, p. 219), showed that with the aid of these characters he was able to separate definitely *A. anglica* from *A. cinnamomea*, Pz. (in this he differs from Dr. Fleischer, who professes his inability to see any difference in these organs in the two forms), and *G. nidicola*, Joy, from *G. rotundatus*, Kug.; in the latter case an illustration was given to show how very different in shape this organ is in the two forms. Mr. H. Britten had a useful note on the distinctive characters of *Clambus minutus*, Sturm., and *C. punctulum*, Beck. (*loc. cit.*, p. 250); it will be remembered that Mr. Donisthorpe reinstated this latter species in our list last year.

There was only one article dealing directly with mimicry, that by Dr. Chapman on "Mimicry of *Phytodecta variabilis*, Oliv., and *Coccinella septempunctata*," L. (*loc. cit.*, p. 186), in which he gave an account of his observations at Amelie-les-Bains, with some remarks on Mr. Bateson's previous account of the species *P. variabilis* (*Proc. Zool. Soc. Lond.*, 1895, pp. 850-860).

Of notes dealing with the distribution of our fauna throughout the country, there were several to which attention may be drawn. Dr. Joy in "A further note on the Coleoptera of the Scilly Isles" (*loc. cit.*, p. 54) brought up the total recorded to date to 331; in this note he stated that he was now convinced that *Sunius lyonessius*, Joy, was a distinct species; I see no reason to modify the opinion I expressed on this point in my "Retrospect for 1908" (*Ent. Record*, xxi., p. 27). Mr. de la Garde gave a valuable list of coleoptera found at Braunton and other places in Devon (*Ent. Mo. Mag.*, p. 86); and Mr. Tomlin published lists of captures in the county of Hereford (*loc. cit.*, pp. 56 and 252).

Attention must be drawn to a paper (*loc. cit.*, p. 196) by Messrs. Champion and Lloyd on some interesting British insects, which was accompanied by a beautiful and accurately coloured plate, illustrating seven of the most interesting additions made to our list during recent years. This plate should stimulate collectors to endeavour to add new

records for these species, all very rare and very local. Those coleopterists who are studying the *Cossonidae* should consult Mr. Champion's notes on that family (*loc. cit.*, pp. 103, 121), in which there is much valuable information on synonymy, distribution, etc.

There were two references to the dispersal or migration of coleoptera; one by Mr. W. E. Sharp describing his experience last May at Bridlington (*Ent. Record*, xxi., p. 164), when he found the sea-shore covered with vast hordes of *Gastroidea polygoni*, L., and other species of beetles, a sudden spell of warmth after severe cold having given an impulse probably to nuptial flight; the other was an account given by Dr. Longstaff at the meeting of the Entomological Society of London on 2nd June, of a flight of *Coccinella 11-punctata*, L., which he had witnessed about 40 miles above Khartoum (*Ent. Mo. Mag.*, xlv., p. 168).

Mr. Donisthorpe published (*Ent. Record*, xxi., p. 257) his Myrmecophilous Notes for 1909, in which he gave additional localities for many ants' nest species; the conclusion of the notes for 1908 appeared on p. 17 of that journal.

In the *Transactions of the Entomological Society of London* for 1909, there appeared only a few papers dealing with coleoptera; one of these, however, was a valuable memoir; it was by Mr. A. M. Lee, the government entomologist of Tasmania, and was entitled, "A Revision of the Australian and Tasmanian *Malacodermidae*." It extended to just over 200 pages (pp. 45-252), and was illustrated by five plates. Mr. Lea brought up the total known species of the family from these regions to 363; he described a large number of new species, corrected synonymy, and gave valuable tables for separating the species of the different genera. He drew attention to the fact that several species of *Oedemeridae* bear a very remarkable resemblance to certain members of the *Malacodermidae* in the company of which they are usually found. He instanced *Pseudolychus hoemorrhoidalis*, Fab., which is usually found with *Metriorrhynchus rufipennis*, Fab., which it strongly resembles, in fact, like that species, it varies in regard to colour of elytra from entirely reddish to a mere tip of red at the extremity of the elytra. In pt. iii., pp. 397 and 413, Mr. Donisthorpe had two papers; the first, entitled "On the Origin and Ancestral Form of Myrmecophilous Coleoptera," gave an account of the species of coleoptera which are occasionally or often found with ants or in ants' nests in Britain, but more generally away from them; in the second paper, entitled "On the Colonisation of new nests of Ants by Myrmecophilous Coleoptera," after discussing briefly possible hypotheses, the author proceeded to consider the evidence afforded by some of the ants-nests' beetles found in Britain; both papers are very interesting, but much more extensive field observation is wanted before any definite conclusion can be arrived at.

In "The Annals of Scottish Natural History," 1909, April, p. 76, July, p. 145, October, p. 218, Mr. F. Balfour-Browne contributed a paper on "The Aquatic Coleoptera of the Solway District," in which he summarised the previous records of this district, and gave the result of his own three years' work. The paper is characterised by the thoroughness which we always expect from Mr. Balfour-Browne. He recorded about 120 species, and gave a full account of his discovery of such interesting and unexpected species as *Bidessus minutissimus*, Germ., and *Ochthebius lejolisi*, Rey et Muls.



Two valuable local lists appeared during the year. "A Survey and Record of Woolwich and West Kent," published this year at Woolwich, the outcome of the visit of the South-Eastern Union of Scientific Societies to Woolwich in 1907, a volume of 526 pages, contains a list of the coleoptera of that district by Mr. West; he recorded 1850 species, and gave brief notes of the habitat and localities for each species. The second list appeared in the "Guide to the Natural History of the Isle of Wight," edited by Mr. F. Morey, and published at Newport this year. The list was prepared by Mr. Newbery, but, owing to the fact that that gentleman omitted to consult several well-known coleopterists, who have for years collected in the Island, and, further, owing to the fact that for some extraordinary reason, quite inexplicable to most people, Mr. Newbery purposely omitted several interesting and undoubted records, Mr. Donisthorpe was asked to prepare a supplement to Mr. Newbery's list, which contained 1309 species. The supplement increased this by 125, and Mr. Donisthorpe has published (*Ent. Record*, xxi., p. 272) an addition to the above two lists, increasing the total to 1516 species.

It is desirable to mention that the year has seen the beginning of a very ambitious scheme, namely the publication of a "Catalogue of Coleoptera" by Mr. W. Junk, of Berlin, the editing being entrusted to Mr. S. Schenkling; so far three parts have appeared.

I conclude my Retrospect with the feeling that the year 1909 will be one upon which we can look back with satisfaction, as one which has seen a distinct advance in our knowledge of the coleopterous fauna of our native land.

### **Depressaria putridella, Schiff.—A species new to Britain**

(with two plates).

By ALFRED SICH, F.E.S.

(Concluded from vol. xxi., p. 281).

The older British entomologists could only have had the meagre description of the "Vienna catalogue" and Hübner's figure to work by; it is, therefore, not at all surprising that they mistook a dark-veined form of *Depressaria yeatiana*, Fab., for the genuine *D. putridella*, Schiff. The first author to consider is Haworth. He describes a *Depressaria putrida* (the brown-veined), and refers to Hübner's figure of *D. putridella* (*Lep. Brit.*, p. 509, part 3, 1811). Haworth never saw the insect alive, and evidently describes a specimen taken by R. Scales. His description is an excellent one of the dark-veined form of *D. yeatiana*. Indeed, Haworth himself writes, "Ultimæ (*yeatsii* = *yeatiana*) simillimæ sed sufficienter differt, venis fuscis." His description of the stigmata runs as follows: "In medio, at costam versus, puncta quatuor, *quadratum posita*; horum duo antica minuta, atra; *tertium triplo majus, rotundatum, fuscum*; quartum minutum subocellare, iride nigrâ, albâ pupillâ." This applies exactly to *D. yeatiana*, but those words I have written in italics could form no part of a description of the stigmata on the forewings of *D. putridella*. Again, of the hindwings, Haworth says, "Posticæ albidæ, ciliis amplis, stramineis, sericeis." This is accurate as regards *D. yeatiana*, but inapplicable to *D. putridella*, as has been already shown when comparing these two species.

This description of Haworth's, which, I think, would have been very different if he had the real *D. putridella* before him, seems to form the basis of all the descriptions published under this name by British authors till that by Stainton in 1870, when he described specimens of the true species from Germany. Curtis mentions the name only in his *Guide* (1829). Stephens, in his *Catalogue of British Insects* (1829), lists *D. putridella*, citing Hübner, Haworth, and Curtis. We learn here that he took the moth himself, and that it occurred within 25 miles of St. Paul's Cathedral, London. Later, in the *Illustrations*, Stephens describes an insect under the name of *D. putridella*, and mentions Norfolk and the New Forest as localities, but not the London district, though he refers to his *Catalogue*. His Latin diagnosis is very similar to Haworth's, and indeed his whole description reminds one very strongly of that by Haworth. Of the stigmata he says, "Four dots on the disc towards the costa, two of which are minute and black, and placed obliquely before the middle, then a larger fuscous one, and finally a white one, with a black edge." Of the hindwings he says, "Posterior wings whitish, with pale ochreous cilia." The larger fuscous dot, the colour of the hindwings, and the cilia point to *D. yeatiana* (*Illust. Brit. Ent. Haust.*, vol. iv., p. 202, 1834).

Stephens' own specimen, now in the collection at the British Museum, labelled "*putrida*," clears up, however, all doubt as to what species he had before him. This specimen is certainly *D. yeatiana*, but curiously it is almost the least-veined example of Stephens' series, the veins being only marked by dots. Above it are other specimens with quite strongly-marked veins. In fact the specimen, labelled "*yeatiana*," is much more strongly marked than that labelled "*putrida*." There is one curious point about the label attached to this specimen. Stephens himself called the species *putridella*, but this insect is labelled "*putrida*," which is the name Haworth used. We know that Stephens bought some of Haworth's insects; can this specimen be the type of Haworth's *Depressaria putrida*? This is hardly possible, as it has not dark veins, a feature on which Haworth insists. My own idea is that the specimen labelled "*yeatiana*" is really Haworth's type specimen of *putrida*, and the specimen now bearing the label *putrida* is Haworth's type of *yeatsii*, and further that, at some time, both these labels became in some way detached from the specimens, and were wrongly replaced. Each of these labels has two pinholes. The one bearing the word *putrida* is evidently contemporary with those bearing the names *purpurea*, *altremi* (sic), and *mediopectinella*, but the other, judging from the colour of the paper and the darker ink, seems to have been written later. If so, then that may account for its bearing the word *yeatiana*, instead of *yeatsii*, as if Haworth, in later years, adopted the name originally given by Fabricius, or as if the label had been written by another.

There is an interesting figure in Wood's *Index* (1839). It is numbered 1180, and by reference to page 172, we find it represents *Depressaria putridella*, the brown-veined. Wood refers to Stephens, but does not say whence he obtained the specimen he figures. The ground colour of the forewings is pale brown, near the base is a longitudinally elongate triangular dark spot from which a darker brown shade runs to the hind margin; there are similar shades along



the costa and the hind margin. The discoidal spot is dark, and the space between it and the dark triangular mark is of the pale ground colour. The veins are strongly marked in fuscous. The hindwings, and the fringes of all the wings, are pale brown. This figure neither represents *D. putridella* nor *D. yeatiana*, and, after comparing the figure with various species of *Depressaria*, I have come to the conclusion that it may have been drawn from a specimen of *D. ultimella*, Stt., a species not then described, though it was probably then no rarer than it is now. In the second (Westwood's) edition of this work, the figure is coloured much more like the figure of *D. yeatiana*. We need not consider Rennie, as he tells us nothing that previous authors did not mention (*Conspectus*, p. 186, 1832). There is a figure in Humphreys and Westwood's *British Moths* of a *Depressaria putridella*, but this figure is too poor to be identified with any species. The accompanying description, more or less borrowed from Stephens, again shows that, even if the authors had a moth before them when they drew it up, the insect was not *D. putridella*, Schiff., but *D. yeatiana*, Fab. (*Brit. Moths*, etc., vol. ii., p. 183, pl. ciii., f. 2, 1851).

In conclusion, I think Mr. Green is to be congratulated on his discovery that this pretty and variable species is an inhabitant of the British Isles. My very best thanks are due to Mr. Hugh Main for his kindness in supplying me with the beautiful photographs from which plate xv was reproduced, and also to the authorities of the Natural History Museum who allowed me to examine the very interesting series of this species collected from the continent by the late Mr. Stainton.

### Lepidoptera at Digne and La Grave in July, 1909.

By (REV.) FRANK E. LOWE, M.A., F.E.S.

Mr. A. H. Jones and myself agreed this summer upon a joint expedition to Digne and to la Grave. At Digne, where we arrived on July 11th, we had but poor sport considering the well-earned reputation of the place. We have not to record a single species, so far as I know, that is not generally common there. As a matter of fact, insects on the whole were scarce. Of *Papilio alexanor* and *Polymnatus meleager* ♀, we took respectively rather less than a dozen decent specimens between us. I got one good *Polygonia egea*, and saw two or three more ragged specimens, one *Hipparchia jidia*, but of *Satyrus actea* not a sign, though *S. cordula* in both sexes was fine and common. Jones was more fortunate in securing two good aberrant forms of *Melitaea didyma*, but I think we are both of opinion that our visit to Digne resulted in disappointment. It is quite useless to repeat the oft-told tale of things taken or noted. We packed up, therefore, and left on July 23rd, arriving at la Grave in the Dauphny Alps on the 24th. This ground has been less exploited, and, though it did not prove "the El Dorado of butterfly life" surmised by our editor (*Ent. Record*, ix., p. 202), it was not without considerable entomological interest. We were a fortnight earlier than the date of Mr. Tutt's visit, and also favoured with better weather, but we saw nothing of *Erebia scipio*\*, which he reports from the Plateau d'Emparis, "two

\* This was reported through a *lapsus calami* for *Erebia stygne*, and corrected *Ent. Rec.*, xvii., p. 214.—Ed.

specimens worn." By far the most interesting event of our stay was the discovery, on July 29th, of *Melitaea deione*, on the sides of the road one mile below the village. Unfortunately, it had been out long, and was almost over, and very few of the specimens taken were fit for the cabinet. Jones secured one truly magnificent female, and for the rest we got together a short series of fairly presentable examples of both sexes. This we believe to be the most northern station for *M. deione* yet recorded in the French Alps. It seems to be a race of some little peculiarities of its own, and not, as might have been expected, to approach the Swiss var. *berisalensis*, or to reproduce the Digne form. To my mind it is nearer to the form taken at La Granja, than to those that I have seen from Digne. It is altogether a darker insect. The ground colour duller, and the black tracery coarser, but it is practically indistinguishable from specimens kindly sent me by Mr. A. S. Tetley, taken this year at Axat, Aude, Sth. France. The Spanish insects, on the average, are larger, and even more strongly marked with black, while at the same time possessing greater brilliancy than the Dauphiné form, due possibly to superior condition. Among the Cœnonymphids and Erebiids, it was not possible, unfortunately, to carry on the observations made by Mr. Tutt, and noted *antea*, vols. viii and ix, as the species *C. iphis* and *C. satyrion* were scarce, as also were *Melampias melampus* and *M. pharte*, and in the last two from the absence of females I think not fully out. I took *M. melampus* only at le Lautaret, where we spent July 31st, and *M. pharte* only on the slopes at the foot of the Meije Glacier; both were at the time very local and scarce. *M. melampus* is a small form with spots on upper wings generally reduced in number and size, exactly corresponding with the prevailing form at Pontresina. Five *M. pharte* came from la Grave, on the last two days of my stay, July 31st and August 1st, taken in a restricted corner of an uncut meadow just before the rough ground that leads up to the glacier. These were quite ordinary, and might have come from Mt. Pilatus. Each species was easily distinguishable, and the few obtained showed no unusual signs of approximation to each other.

Of the "blues" at the lower altitude below and above the village, *Hirsutina damon* was the most abundant, smaller and darker than those from Bérisal—or Aigle—tending perhaps to var. *ferreti*, Favre—*Polyommatus escheri* was magnificent both in size and colour. Higher on the mountains *P. eros* was the commonest of the genus, small and not so bright as specimens from the Simplon, Zermatt, and Pontresina and the black borders appear to be generally narrower and less inclined to suffusion. I got a few females. *Parnassius delius* was decidedly common, mostly without white centres to the red spots, and some without red on upper wings, ab. *inornata*. In the list below, taken at la Grave between July 25th and August 1st, I have added "L" to those species noted at le Lautaret only: *Papilio machaon*, scarce; *Parnassius apollo*, *P. delius*; *Aporia crataegi*; *Pontia callidice*; *Pieris brassicae*, *P. rapae*; *Anthocaris belia* var. *ausonia*, one worn; *Colias palaeno*? (L.) (this I chased but did not take); *C. phicomone*, *C. hyale*, *C. edusa*; *Klugia spini*, very common; *Heodes virgaureae*; *Chrysophanus hippothoe* var. *eurybia* (on the Col du Lautaret the females were very fine, not quite the full black of a complete *eurybia*, but with a suggestion of a central blaze of tawny); *Loweia alciphron* var. *gordius*; *Plebeius argus*



(aegon): *Latiroina orbitulus* (1); *Aricia astrarche*; *Polyommatus eros*, *P. icarus* (rare), *P. escheri*, *P. hylas*; *Agriades bellargus*, *A. coridon*; *Cyaniris semiargus* and var. *montana* (L.); *Lycaena arion* (1); *Aglais urticae*; *Vanessa io*; *Melitaea cythia* (1 ♀ worn), *M. phoebe*, *M. didyma*, *M. dictynna* (rare), *M. deione*, *M. parthenie* var. *varia* (scarce and worn); *Brenthis pales*, very light colour, emerging, *B. ino*, just emerging 800ft. above the village of la Grave on July 31st; *Issoria lathonia*; *Argynnis aglaia*, scarce and poor, *A. niobe* var. *eris*, only two, August 1st, remarkably scarce; *Melanargia galathea*; *Melampias epiphron*, *M. melampus* (L), *M. pharte*; *Erebia ceto*, one worn (L), *E. oeme* (L), one worn, *E. stygne*, fine, *E. tyndarus*, fine, both at le Lautaret and la Grave, often ab. *dromus*; *Hipparchia alcyone*; *Satyrus cordula*; *Pararge moera*; *Epinephele lycaon*, males only, *Coenonympha iphis*, *C. satyrion*, *C. pamphilus* (L); *Erynnis alceae* (L); *Urbicula comma*; *Adopaea flava*; *Powellia sao*; *Hesperia alceus*.

### Some notes on collecting Lepidoptera in 1909.

By C. W. SPERRING.

Without doubt, the year 1909 opened very satisfactorily for lepidopterists, the mild nights of March and April producing a good number of insects. The district lamps were, as usual, well patronised by *Anisopteryx aescularia* (Kidbrooke, Eltham, and Chislehurst), while *Polyphoca flavicornis* was similarly attracted by light on the borders of the oak-wood running along the main road over Shooters Hill. *Hybernia marginaria* ♂s were captured sitting on the bushes at Petts Wood, Chislehurst, and males of *Amphidasys strataria* were attracted in plenty by means of virgin females secured in muslin-covered boxes affixed to the tree-trunks. The latter are very sluggish, and, when released from captivity and placed on the tree-trunk, sit very still. Sallow-beating also proved very remunerative, the following turning up in the beating-tray in considerable numbers, viz., *Taenioctampa gothica*, *T. pulverulenta*, *T. stabilis*, *T. gracilis*, *T. munda*, and *Pachnobia rubricosa*, all at Chislehurst, with a few hibernated *Orrhodia vaccinii*, which were also found in great abundance on the willows on the railway-bank at Crown Woods, Eltham, being more common there than any of the other species. The appearance of a ♀ *T. pulverulenta* in the beating-tray, was the cause of a great deal of excitement on the part of at least half-a-dozen males, which buffeted and whirled one over the other in an attempt to secure the female, until the boxing of the latter put an end to an extremely lively and interesting interlude. During the early part of April, *Brephos parthenias* turned up at Chislehurst in considerable numbers as usual, and were frequently disturbed from the heather on which they rested, only to immediately flutter off to the tops of the birches. Many specimens were also found on the willow-blossoms, but required very careful stalking to get within striking distance.

Perhaps the two most noticeable features of the early part of 1909 (from a lepidopterists' point of view) were the wonderful abundance of spring larvae with consequent damage to enormous numbers of trees, and the wide difference between the dates usually accepted as normal for the appearance of insects and the actual appearance of the same.

The warm sunny days of April and May had such an excellent effect on both larvæ and pupæ, that the end of the latter month saw *Cupido minimus* in profusion on the chalk-hills of the south coast (Portsmouth), accompanied by *Rumicia phlaeas*, *Coenonympha pamphilus*, *Polyommatus icarus* (nearly all males), *Celastrina argiolus*, *Agriades thetis* (*bellargus*) (Ventnor), *Aricia astrarche* (Ventnor), *Brenthis euphrosyne* (Waterlooville, Hants.), *Euchloë cardamines*, *Pieris rapae*, *P. napi*, and *P. brassicae*, *Nisoniades tages*, and *Callophrys rubi* (Shoreham, Kent), while the hibernated Vanessids, *Pyrameis atalanta* and *Vanessa io*, and *Gonepteryx rhamni*, disported themselves in the brilliant sunshine, *P. atalanta* being still on the wing on June 10th, at Ventnor, and all these also being seen at Porchester.

*Euchloë cardamines* was without doubt one of the commonest of the spring insects this year, at least twenty being counted on the wing at one time, of which seven ♂s disported themselves together, but ♀s were extremely scarce, and few were captured despite careful searching. In connection with *Coenonympha pamphilus*, the early-emerging examples seem certainly worth more than a passing glance, examination resulting in more pallid examples than are usually found at a later period of the year. Careful turning over of everything captured, resulted in an almost entirely white *Pieris rapae*, and another of the same species measuring only  $\frac{3}{4}$  inch from tip to tip of extended wings, several good underside abs. of *Agriades bellargus* (now to be known as *A. thetis*), females of *Polyommatus icarus*, strongly embodying the male coloration, together with the ab. *icarinus*. Searching the mullein growing in the warm shelter of the hedgerow at the foot of the chalk-hills at Portsmouth, gave small larvæ of *Cucullia verbasci* (early June), while, at the same time, the larvæ of *Malacosoma neustria* which were on every hedgerow in the same locality, were in a most forward state, as were also those of *Lachneis lanestris*, many being in their last instar, a most unusual thing so early in the season. Great depredations by the commoner larvæ were everywhere noticeable, for which *Hybernia defoliaria*, *Cheimatobia brumata*, and *Oporabia dilutata* were largely responsible, their large numbers being due, no doubt, to the mild weather experienced during October, November, and December of last year, the writer counting nearly 50 specimens of *C. brumata* and *O. dilutata* on one lamp. The larvæ of *Diloba coeruleocephala* were also found in abundance, between 40 and 50 being tumbled out of a hawthorn hedge at Waterlooville, Hants, during the first week of June, in less than half-an-hour, while larvæ of *Crocallis elinvaria*, *Abraxas grossulariata*, *Poecilocampa populi*, *Arctia caja*, *Cosmotriche potatoaria*, *Triphaena ianthina*, *T. promba*, *Calymnia trapezina*, etc., were equally common.

Walking through the rough herbage of the hillside at Porchester, or beating the hedgerows adjacent, one disturbed *Bapta temerata*, *Aspilates ochrearia*, *Venilia maculata*, *Chiasmia clathrata*, *Lobophora secalisata*, *Coremia ferrugata*, *C. unidentaria*, *Anoebe viridaria*, *Xanthorhoe sociata*, *X. montanata*, *Anaitis plagiata*, *Euclidia mi*, *Acontia luctuosa*, and *Hipoerita jacobaeae*, with one female *Diaphora mendica* at rest on the hedgebank, a very light form of *Apatela aceris* at rest on a sycamore-trunk (Ventnor), and a nice banded form of *Triana psi* at rest on a fence (Waterlooville). A walk through the adjacent pinewoods gave *Thera variata* (one specimen only), and dusking in the same



locality *Apamea gemina* and *Hepialus lupulinus*, the only insect taken at sugar being *Grammesia trigrammica*.

One specimen of *Angiades sylvanus* was captured on June 4th, and also *Hesperia malvae*, the date mentioned being a very early one for the insect in question.

The collecting on the south coast was carried out during week ends, and also during a week comprising the last few days of May, and the first week of June. Work nearer to London was, however, in force during the earlier days of the week. Searching for larvæ, the writer was pleased to find that of *Lasiocampa quercus* at the back of Shooters Hill, showing that it had not entirely forsaken its old haunts despite the growth of greater London, and that motor traffic passed constantly, while larvæ of *Cosmotriche potataria* were largely in evidence. Dusking at Chislehurst gave *Scoliopteryx libatrix*, *Ephyra pendularia*, *Tephrosia punctularia* (on tree-trunks), *Gonodontis bidentata*, and *Cabera pusaria*, with the following at Shooters Hill, viz., *Anticlea badiata*, *Asthenes candidata*, *Iodis lactearia*, *Camptogramma bilineata*, *Rumia crataegata*, *Apamea basilinea* (Kidbrooke, May 28th), and *Hydriomena impluviata* (Blendon, June 18th).

Sugar during the spring and early summer gave exceedingly poor results, constant wet days and cold nights spoiling any possibility of good results, and even such insects as were captured, were generally in poor condition, the only ones to record for June being *Dipterygia scabriuscula*, *Xylophasia lithoxylea*, *X. monoglypha*, *Graphiphora augur*, *Naenia typica*, *Noctua festiva*, *Triphaena pronuba* (also on the wing in mid-September in perfect condition everywhere), *Phlogophora meticulosa*, and *Mamestra brassicae*, with *Dasychira pudibunda* at light, a very sorry list for several nights' work at Crown Woods, Eltham. A newly-emerged *Hylophila prasinana* was taken at rest on a nettle stem (Blendon), *Theretra porcellus* (Culham, Oxon), *Parasemia plantaginis* (South Downs, Hants), all in June, and *Melanargia galatea* (Shoreham, Kent), *Enodia hyperanthus* (Cudham), and *Epinephele tithonus* (Portsmouth Hill) in July. At this time (July) the breeding-cage was giving large numbers of *Anthrocera filipendulae* from collected pupæ from the last-mentioned locality, *Porthesia similis* (Blendon larvæ), *Euproctis chrysorrhoea* (Southend, larvæ collected in autumn of 1908), *Plusia moneta* (larvæ collected at Shoreham, Kent), and a few *Eutricha quercifolia*, and *Lasiocampa quercus* from larvæ taken on hawthorn at Culham, Oxon, earlier in the year.

Dusking from mid-June till end of July, secured *Acidalia aversata* (Kidbrooke), *Hepialus hectus* (Chislehurst), and *H. humuli* (Blackheath), *Lozogramma petrarum* (Chislehurst), *Metrocampa margaritaria*, and *Euchloris pustulata* (Shooters Hill), *Hemerophila abruptaria* (Blackheath, at rest), *Mamestra persicariae* (Blackheath), *Acidalia imitaria* (Shooters Hill), *Mesoleuca albicollata* (Chislehurst), *Scotosia retulata* (Chislehurst), *Xanthorhoe sociata* (Eltham), *Hypena proboscidealis* (Chislehurst), *Noctua triangulum* (Chislehurst), and *Asthenes candidata* (Eltham), also the day-flying *Ortholitha limitata* (Cudham).

During the first three weeks in August, the writer was practically unable to undertake any field work, but in the last week of that month took a trip to Devon, staying inland about three or four miles from Sidmouth, Devon. Probably the stormy weather of the several weeks preceding accounted for the poor condition of many of the insects

secured. *Polyommatus icarus* appeared to be entirely over, only two ragged specimens being observed, but *Pararge megera* was observed in profusion, there being literally dozens of them on the wing, some of them too worn for cabinet purposes, but others in excellent condition. *Vanessa io* did not appear to be very abundant, but *Pyrameis atalanta* was prevalent everywhere. The borders of the oak-woods gave *Bithys quercus*, and, in the shady lanes, both worn specimens of the second brood of *Pararge egeria* and newly-emerged specimens of a possible third brood of the same were on the wing, the latter being secured in considerable numbers by a fellow collector in the week following. Not a single specimen of either *Pyrameis cardui* or *Colias edusa* was observed, although the clover-fields were carefully walked through each day (the latter insect seems to have been very uncommon everywhere this year. One specimen of this insect travelled over from the continent this year, to the writer's knowledge, and when last seen was observed feebly fluttering on the decks of a cargo boat at London Bridge). A very beautiful specimen of *Rumicia phlaea* was observed, the margins of both fore- and hindwings being outlined with white, but, unfortunately, a net was not at hand, and an attempt at capture with a cap, was a failure. The insect, however, was sufficiently still for some little time, to permit of inspection at a short distance. At sugar in the same district, *Amphipyra pyramidea* occurred in large numbers, both light and dark forms, this insect being also observed at sugar at Chislehurst in the second week in September, in perfect condition, whereas they were going over fast in Devon at the end of August. *Phaetrea rumicis*, *Mania maura*, *Hydroecia nictitans*, *Noctua umbrosa*, *Scoliopteryx libatrix*, *Phlogophora meticulosa*, and *Amphipyra tragopogonis*, also visited the sugar-patch. *Epione apiciaria* and *Lithosia lurideola* came to light, while *Abraxas grossulariata*, *Mesoleuca ocellata*, *Xanthorhoe sociata*, *Coremia ferrugata*, and *U. munitata* were taken on the wing at dusk. Beating for larvæ in the same district, proved quite a failure, only *Dasychira pudibunda* and *Amphidasys betularia* being secured.

Field-work near London was resumed immediately (September). As usual, the males of *Notolophus (Orgyia) antiqua* were common, and specimens of the second-brood of *Celastrina argiolus* were frequently observed (Birchwood and Shoreham, Kent); also a worn specimen of *Argynnis aglaia* (Shoreham, Kent), and *Agrotis agathina* at light (Chislehurst). Larva-beating at Birchwood, on the banks of the railway, gave *Amorpha populi* (aspen), and *Lophopteryx camelina*, *Drepana lacertinaria*, and *Dasychira pudibunda* from birch. Examples of the second-brood of *Anaitis plagiata* were taken on the wing both at Eltham and Westerham (Kent), and *Bryophila perla* on the lichen-covered walls at the last locality, likewise *Thera firmata* (on pine), and *Coremia propugnata* at rest on an oak-tree trunk. Larvæ of *Triaena psi* were common towards end of September (Eltham and Blackheath), *Hylophila prasinana* (Chislehurst), and several of *Smerinthus ocellata*, were picked up, evidently wandering about looking for a suitable spot for pupation; also one *Mamestra psi* at the former locality. Sugar, at Chislehurst in September, resulted, as usual, in the attraction of considerable numbers of *Orthosia macilenta*, also *Anchocelis (Omphaloscelis) lunosa*, *Mellinia circellaris*, *Phlogophora meticulosa*, *Peridroma (Agrotis) saucia*, *Asphalia diluta*.



*Cataloca nupta* was fairly common, as usual at the street lamps (all males Blackheath), also *Ennomos tiliaria* (*alniaria*), and *Thera variata* (last named locality).

October, at Chislehurst, saw great numbers of *Orrhodia vaccinii* both at sugar and at rest on the tree-trunks, a very fine series being secured, including most of the known aberrations. Only one specimen of *Orrhodia ligula* was secured, though several hundred specimens of the genus were examined. *Scopelosoma* (*Eupsilia*) *satellitica* was very common, but there were few *Miselia oxyacanthae*, though both type and ab. *capucina* were taken. During both October and November, *Himera pennaria*, including well-suffused examples, were attracted to light or found at rest on birch twigs, as well as *Hybernica defoliaria* and *H. aurantaria*, *Cheimatobia brumata*, *C. boreata*, and *Oporabia dilutata*.

### Myrmecophilous Notes for 1909.

By H. Sr. J. K. DONISTHORPE, F.Z.S., F.E.S.

(Concluded from vol. xxi., p. 291.)

CHALCIDIDÆ.—SPALANGIA ERYTHROMERA, Foerst.—This species occurred with its usual host, *Lasius fuliginosus*, at Darenth Wood, in July. I have taken various other Chalcids in ants' nests, but have been unable to get them named at present.

HETEROPTERA.—PIEZOSTETHUS FORMICETORUM, Boh.—I took this insect sparingly with *Formica rufa* at Nethy Bridge, in May. This is another new locality for the species. It has now been found at Braemar, Rannoch, and Nethy Bridge in Britain.

BRACONIDÆ.—EUPHORUS BISTIGMATICUS, Morley, *Ent. Mo. Mag.*, 1909, p. 212.—I captured ♀s hovering over nests of *F. rufa* at Weybridge and Bewdley Forest, in July. It was first taken in Britain by me at Weybridge, in July, 1906 (see *Ent. Rec.*, 1907, p. 5), and I bred a ♂ in my *F. rufa* observation-nest, June 13th, 1907 (see *Ent. Rec.*, 1907, p. 255). Mr. Hamm has taken it over *F. rufa* nests in the New Forest. Wasmann has found it at Luxemburg with *F. rufa* and *F. pratensis*. The ♀s hover steadily over the ant, gradually getting nearer, and when they get the chance strike at it to lay an egg. The ants often notice its presence, and reach up to try and drive it away.

SPILOMMA FALCONIVIBRANS, Morley (*Ent. Mo. Mag.*, 1909, p. 211).—Morley has described this new genus and species from specimens, ♂s and ♀s, bred by me in an observation-nest of *F. fusca*, from Porlock (see *Ent. Rec.*, 1907, p. 255).

PACHYLOMMA BUCCATA, Bréb.—I captured a ♀ hovering over a nest of *Lasius niger* at St. Helens, Isle of Wight, on August 29th. In the *Ent. Mo. Mag.*, 1909, p. 209, Morley records the few known British examples. Marshall found the ♀s associating with *Myrmica scabrinodis*. Giraud found both sexes hovering over a society of very little ants. De Gaulle found it associated with *Lasius brunneus* and *M. scabrinodis*.

ASPILOTA NERVOSA, Hal. ♂.—This is a small Braconid that I took in a nest of *Lasius fuliginosus*, last June, at Darenth Wood. I sent it to Morley, who writes as follows: "I am satisfied that it is *Aspilota nervosa*, Hal., of which Marshall gives a lot of vars., which he thinks are probably all good species. Yours is var. 6, of which only the ♂ is known." These Braconids are parasitic on diptera, and it is most

probable that my specimen was bred from one of the many species of diptera which inhabit this nest, some of which are abundant.

APHIDÆ.—PARACLETES CIMICIFORMIS, C. Heyd.—This species was taken in some numbers in nests of *Tetramorium caespitum*, the other side of Rame Head, in April. This is the "Myrmecophilous aphid" *par excellence*, it is much more active than the others found with ants. When the nest is disturbed the plant-lice themselves hurry down into the chambers, as well as being carried by the ants. Evans found it with *Lasius flavus* at Queen's Ferry (*Ann. Scot. Nat. Hist.*, 1906, p. 241), and Newstead with the same ant at Loggerheads (*Ent. Mo. Mag.*, 1893, p. 115), but the principal host is *Tetramorium caespitum* (see Schouteden, "Les Aphides Radicicoles de Belgique et les Fourmis," *Ann. Soc. Ent. Belg.*, xlv., 1902, p. 138). I have taken a number of other specimens of *Aphidæ* in ants' nests, which have not yet been determined.

COCCIDÆ.—RIPERSIA SUBTERRANEA, Newst.—This species occurred in numbers in nests of *Lasius niger* and *Tetramorium caespitum* at Whitsand Bay, in April. This species has now occurred at Ingoldisthorpe (Newstead), North Queen's Ferry (Evans), Dartmouth and Whitsand Bay (Donisthorpe). According to Newstead it has not been recorded from any other part of the world. I must thank my friend Mr. Ernest Green for kindly naming these specimens.

ACARINA.—TRACHYUROPODA COCCINEA, Mich.—Occurred with *F. rufa*, Parkhurst Forest, Isle of Wight, April 26th, Buddon Wood, Leicestershire, May 5th, and with *F. fusca*, Bradgate Park, Leicestershire, May 3rd, and Forth Bridge, May 14th.

TRACHYUROPODA LAMINOSA, C.B.—This species was taken with *Tetramorium caespitum* at Whitsand Bay and Rame Head, in April.

T. EXCAVATA, Wasm.—Found with *Lasius niger* at Whitsand Bay and Rame Head, in April.

UROTRACHYTES FORMICARIUS, Lubb.—In nests of *Lasius flavus*, Virtuous Lady Mine, April 20th, Bradgate Park, May 3rd, and Forth Bridge, May 13th.

LÆLAPS MYRMECOPHILUS, Berl.—In plenty as usual with *L. rufibarbis* var. *fusco-rufibarbis* at Whitsand Bay.

L. EQUITANS, Mich.—In nests of *Tetramorium caespitum* at Whitsand Bay, in April, jumping on and off the ants.

L. CUNIFER, Mich.—Taken with *F. rufa* at Virtuous Lady Mine, April 20th, Parkhurst Forest, April 26th, Buddon Wood, May 4th, Nethy Bridge, May 18th; with *F. rufibarbis* var. *fusco-rufibarbis*, Whitsand Bay, April; with *Lasius umbratus* at Wellington College, June 19th; with *Formica sanguinea* at Bewdley, July 21st; and with *Lasius fuliginosus* at Darenth Wood, July 26th.

L. OOPHILUS, Wasm.—In and amongst the egg-masses of *Formica rufa* at Virtuous Lady Mine, April 20th, Parkhurst Forest, April 26th, Buddon Wood, May 4th; of *F. rufibarbis* var. *fusco-rufibarbis*, Whitsand Bay, April; of *F. fusca*, Bradgate Park, May 8th, and of *F. rufipraterensis*, Nethy Bridge, May 16th.

L. LÆVIS, Mich.—Very rare with *Tetramorium caespitum* at Whitsand Bay, in April. This species is new to Britain.

L. VACUUS, Mich.—One specimen taken in a nest of *Lasius niger* at Whitsand Bay, in April. This is also a species new to Britain.

UROPLITELLA MINUTISSIMA, Berl.—Taken with *L. niger* at Whitsand Bay, in April.



*U. OVATULA*, Berl.—This species new to Britain occurred with *L. flavus* at Bradgate Park, Leicestershire, May 3rd.

*ANTENNOPHORUS GRANDIS*, Berl.—On ants in a nest of *Lasius fuliginosus* at Wellington College, June 19th.

*A. PUBESCENS*, Wasm.—On ants in nests of *Lasius flavus* at Whitsand Bay and Rame Head, in April. It is another addition to the British list, and the first native specimen, taken by my friend Mr. Keys, was riding on the chin of an ant, as is usual with *Antennophorus*. On a special search being made next day for more we soon found it in numbers. I subsequently found specimens on ants in a nest of *Lasius flavus*, sent to me by Mr. Forsyth from Portland, and kept them alive for some time in a small plaster nest with some ants.

*A. FORELI*, Wasm.—This is also new to Britain. I swept a specimen of *Lasius niger* at Abingdon, near Oxford, on July 12th, which I perceived had, as I thought, an *Antennophorus* on it. On looking at it, when I had put it in a tube, with a lens, I found it had two specimens of the mite on it, a ♂ and ♀, one on the chin and the other on the top of the head, they were vibrating the front legs rapidly and tapping at each other round the ant's jaws. We now possess all four species of *Antennophorus* in Britain.

*UROBOVELLA OBOVATA*, C. and B.—Taken with *Lasius flavus* at Whitsand Bay, in April, and Bradgate Park in May, also new to Britain.

*CILLIBANO COMATA*, Leon.—In plenty on the larvæ of *L. flavus* at Whitsand Bay, in April, and very sparingly on larvæ of *L. niger* at Whitsand Bay, and Luccombe Chine, Isle of Wight. I kept some alive for some time in a small plaster observation-nest. They always remained fastened to the larvæ of the ants.

*SPHEROLELAPS HOLOTHYROIDES*, Leon.—I found a specimen of this species with *Lasius umbratus* at Woking, in May, and in some numbers with the same ant at Wellington College, in June. We now possess 22 species of myrmecophilous *Acari* as British, of which I have had the good fortune to add 15 species myself. I must again thank Mr. N. D. F. Pierce for his kindness in identifying most of my specimens for me.

*MYRMECOCORUS SEEDS*.—I have not been able to collect many seeds from ants this year, the following, however, are such as I have found.

*MELICA UNIFLORA*, the wood Melick.—I took a number of these seeds from the ants at a nest of *Lasius fuliginosus* at Darenth Wood, as they brought them up to the nest. This seed belongs to one of the types of seeds attractive to ants by reason of the food stored in them.

*CARDAMINE SEEDS*.—I found a great number of seeds in many of the nests of *Tetramorium caespitum* at Whitsand Bay, in April. Professor Weiss tells me they are those of *Cardamine*, probably either *flexuosa* or *hirsuta*. There does not appear to be any reason why the ants should collect them, as they do not possess food bodies.

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### Some notes on the Egyptian Lepidoptera.

By (Miss) D. J. JACKSON.

A short account of a few lepidoptera taken by myself in Egypt during the spring of 1908, may be of interest to some of the readers of this magazine. I observed very few different kinds of butterflies;

probably it was too early in the year, but I should hardly think at any time the richly-cultivated banks of the Nile would favour a very great variety of species. Certainly, all the land in the neighbourhood of Cairo seemed thoroughly to suit *Pyrameis cardui*, which, with *Colias edusa* and the less common *Pieris rapae*, was one of the most abundant butterflies in the fields and gardens during the early part of April; even up the river at Assuan, in March, I observed one or two specimens rejoicing in the few parched-looking flowers growing in the little gardens at the edge of the desert.

The large and handsome *Linnaea chrysippus* I saw for the first time at Komombo, where several were flitting about in a field amongst some castor-oil plants. I afterwards observed it at Cairo and Assuan, but it seemed rather local. Still more local was *Plebeius loewi*, which I only took in one locality, viz., the Mokattam Hills near Cairo, on April 17th, flying with *Melitaea didyma* over the scrubby desert plants which spring up here and there after rain, and give a green tinge to the vast expanse of golden sand. Of the other "blues" observed *Lampides boeticus* was a common insect in every field and garden from Cairo to Luxor (February 6th) and Assuan (March 3rd); the pretty little *Tarucus theophrastus* was constantly seen flitting about the flower-beds at Luxor (February 6th), and at Assuan (March 2nd), and *Zizera lysimon* seemed universally distributed from Cairo (April 17th) to Assuan (February 26th).

In the Barrage gardens, near Cairo, I took two specimens of *Chapra mathias* on April 11th and 16th, and *Gegenes nostradamus*, taken in the afternoon of March 13th at Assuan, completed the very short list of butterflies observed.

The lights on the steamer at night, as we sailed up the Nile, or lay at anchor off the bank between Cairo and Assuan, attracted quite a number of species, such as *Peridroma ypsilon* (*suffusa*), abundant Assiout, January 31st; *Euxoa spinifera*, Assiout, January 29th; *Spodoptera abyssinia*, Dendera, February 2nd; *Trichiura obsoleta*, Luxor, February 5th; *Hydrilla maculifera*, Luxor, February 5th; *Eromene ocella*, abundant everywhere; *Thylacoptila paurosema*, Luxor, February 8th; and, in greater numbers than all, *Nomophila noctuella*, which not only abounded at the lights at night, but was on the alert all through the day, ever ready to start up from the grass at the approach of an intruder's footstep. All through the latter part of January, in February, March, and April, it was on the wing, extending from Alexandria to Assuan.

The only hawk moth I observed, was *Phryxus livornica*, which I took both at Cairo and Assuan during March and April. It was a common sight to see one or two of these beautiful creatures hovering over the flower-beds immediately after sunset, poised in the air for a moment with quivering wings, and then darting off as quickly as they had come. About twenty minutes later, simultaneously with the croaking of the frogs and the shrill chirping of the crickets, numerous small moths began to flit about amongst the low-growing herbage in the neighbourhood of Assuan. Chief amongst these were *Tepphrina disputaria*, *Noctuella floralis*, *Cornifrons ulceratalis*, *Ematheudes straminea*, *Hellula undatis*, *Heterographis connexella*, *H. agraphella*, *H. carnea*, *H. decolorata*, *Sesamia cretica*, *Mestleta gayneri*, and *Cenotholopa isidis*.

In the same locality, at about the same time, a row of sunflowers



was very attractive to such moths as *Heliothis peltigera*, *Plusia gamma*, *Cirphis loreyi*, *Laphygma exigua*, and *Agrotis segetum*, and light attracted *Taragama acacia*, and *Pandesoma queravadi*.

*Deiopeia pulchella* seemed fairly common at Assuan, one specimen I took flying of its own accord in the sunshine on March 9th, and others were disturbed from the long grass towards sunset, to fly for a short distance with a wild, erratic flight, before settling again in a similar place.

Such are the few lepidoptera I took during my three months' stay in Egypt, and, from what I was able to observe, they presented quite a British aspect, as will be obvious to any reader from some of the familiar names mentioned above. On the whole, the country did not seem very rich in lepidoptera, all the ground suitable to insect life being richly cultivated, and the only waste ground desert. May not, too, the flooding of the green parts in summer, caused by the rising of the Nile, make the struggle for existence doubly hard?

### Sale of the second part of the late J. A. Clark's collection of Lepidoptera.

The second portion of the collection of lepidoptera formed by the late J. A. Clark was sold on December 7th and 8th, 1909. The prices, on the whole, ruled low, except for very special aberrations and great rarities. The 40 specimens of *Papilio machaon* described by Farren (*Ent. Rec.*, iv., pp. 100-108) produced only £1 16s., but three other aberrations brought 10s. Some good forms of *Euchloe cardamines*, *Colias edusa*, and *C. hyale* produced 10s., 11s., 13s., 7s., and 8s. per lot, whilst lots (8) of var. *helice* produced 18s., 14s., and 21s. respectively. A gynandromorphic *Gonepteryx rhamni* (left forewing chiefly ♂, the rest ♀, with streaks of ♂ colour, "Tilgate, July 9th, 1900") produced £4 5s.; a remarkable *Brenthis selene* (? *B. euphrosyne*) aberrant on both sides (Abbott's Wood, 1892) £3 5s.; a pale cream-coloured *B. euphrosyne* (New Forest, 1893) £2; a dark heavily blotched example of the same species (Epping Forest, June 7th, 1894) £4 8s.; another, forewings deeply suffused, hindwings with basal  $\frac{2}{3}$  black ("Rev. S. Patterson, Bournemouth, 1901") £5 10s.; another dubiously *B. selene* or *B. euphrosyne* without black spots, except in cell, but dusted with black between nervures (Sutherland, 1892) £4; another *B. selene* (Ashdown Forest, 1881, figured in South's *Butterflies*, pl. lvi., fig. 3) £5; another banded through both wings £1 1s. A fine *Argynnis aglaia* (Molescombe, near Brighton, July 13th, 1903, figured in South's *Butterflies*, pl. lxi., fig. 5) £9; *A. adippe* var. *cleodoxa* (W. G. Pearce, New Forest, July 27th, 1895), with others, 16s.; *A. niobe* (Chichester, September 19th, 1895, S. M. Scholefield), with six *A. adippe*, 14s. This is funny, especially the date, as the species is well over at 8000ft. elevation in the Alps in August. If the *A. niobe* were British, it would be, judged by "Dispars," worth at least £50, if foreign (or an escape!) worth 1d., but someone gives 14s., estimated, it has been suggested, by adding together the British and foreign value £50 0s. 1d., dividing this sum by the 100 to 1 chance that it is not British, leaving 10s. for this, and 4s. for the *A. adippe*: *Dryas paphia*, with blotches of *valesina* colour, which was once publicly stated not to exist in these specimens, fetched 6s. and 10s.; a remarkable rayed ♂ (New Forest, 1897), broken, £1 2s.;

another, with dark margin and small submarginal spots (Watford, July, 1895), £1 5s.; another, with the left side *valesina*, the right hindwing deficient in pigment, together with several examples with bleached spots, £1 2s.; whilst a fine silvery-white *Aglaia urticae* (Dover, August 11th, 1874) produced £3; a fine form with the costal black blotches broadly confluent and very dark hindwings (Bexley, 1909), £2 5s.; a similar one, but larger, and rayed with blue on the forewings (Bexley, 1907), £2 10s.; a curious smoky aberration of *Vanessa io* without the pigment (Sligo), £2 2s.; *Pyrameis cardui*, the white costal blotch absent (Dover, 1872), 10s.; *Limenitis sibylla*, white bands obsolete (New Forest, July 11th, 1901), £1 10s.; another, with band very obscure in forewings and absent in hindwings (New Forest, July 3rd, 1901), £1; *Melanargia galatea*, hindwing suffused with black, brought lot 89 up to £1 10s., and two other aberrations (lot 90) to £1 1s.; a fine *Epinephele ianira*, unicolorous light brown ♀ (Williamson, St. Margaret's Bay, 1876), fetched £1 6s.; a "white" aberration of *Hipparchia semele* (Arlington, July 17th, 1902) £3 3s.; a dark ♂ (New Forest) and very pale ♂ £2 5s.; *Enodia hyperanthus* with large streaked ocelli, £2; and another similar, £1 15s. The *Chrysophanus dispar* produced, ♂ s, £3 5s., £3, £2 12s. 6d., £3, and £3 each; ♀ s, £3 3s., £3 7s. 6d., £2 5s., and £1 10s. each, and a ♂ underside £2; three gynandromorphous *Plebeius aegon* fetched 18s.; *Cyaniris semiargus* (♂ and ♀), £1 5s.; ♂, ♀, and ♀ underside, £1 1s.; a gynandromorphic *Polyommatus icarus*, left side ♂ and right side ♀ (Dover, July 7th, 1873), produced 18s.; another left side ♀ right side ♂ (no data) 15s.; whilst lot 148 [with a fine blue *Agriades thetis* (*bellargus*) ♀ masquerading as *P. icarus*], went up to 17s.; a fine "grey" or "leaden" ♂ of *A. thetis* £2 12s. 6d.; two ab. *striata* and one ab. *obsoleta* 18s.; a ♂ with white underside, £2; another ab. *striata* with an ab. *obsoleta*, £2 2s.; a ♂ of *Agriades coridon*, grey or leaden in tint (Sussex, July 10th, 1895), another with dusky forewings, etc., 12s.; others with pale borders, catalogued as *fowleri* (?) fetched, lots 159 and 160, up to 12s. and 16s.; another ab. *obsoleta* and two ab. *parisiensis*, 14s.; another ab. *obsoleta* and ab. *parisiensis*, 16s.; a light brown ♀ and two ab. *parisiensis*, £1 4s.; a ♀ with suggestive gynandromorphism (a streak of ♂ colour) and other forms, 10s.; whilst abs. of *Hesperia malvae*, a pale ab. of *Thymelicus acteon*, an ab. of *Augiades sylvanus*, and a rayed ab. of *Cyclopides palaemon* brought their respective lots (171-174) up to 9s., 9s., 11s., and 11s. respectively. So much for the butterflies.

There were some good Sphingids in the collection, and, on the whole, these produced good prices. Series of six *Manduca atropos* (each with one good aberration) produced 15s., 16s., and 16s. per lot; a very dark aberration of *Agrius convolvuli*, 12s.; a very dark ♀ and a very light ♂ of *Sphinx ligustri*, 10s.; a light ♂ and dark ♂, 12s.; whilst a very fine example strongly marked with black (Hackney, July 11th, 1888) produced £3 10s.; *Hippotion celerio* (Bannister, East Brighton, September, 1896), 18s.; *Phryxus livornica* (Gates, Southampton, June 17th, 1872) and three *Celerio gallii*, 10s.; whilst two hybrid *Smerinthus* hybr. *hybridus*, ♂ and ♀, for 10s., would suggest a slump in the price of this interesting insect, only, that, for others, bred, 1902, 11s. (1), 10s. (1), 11s. (2), were produced. Unusual asymmetrical aberrations of *Sesia stellatarum* produced only 10s., surely much more important and valuable insects than most "blue" ♀ Lycænidæ. Aber-



rations of *Amorpha populi* went at 14s. and 11s. each; a fine asymmetrical ab. of *Mimas tiliae* brought lot 200 up to £1 4s., and a fine unicolorous ab. (lot 202) up to £2 7s. 6d. The beautiful series (ten) of this species (figured *Entom. Record*, 1891, p. 317) produced £5 10s., whilst two other interesting series (15 and 13 specimens respectively) fetched £1 2s. and £4.

The Anthrocerids produced 7s., 7s., 6s., 5s., 11s., 12s., 17s., 9s., 18s., and 18s., per lot. A specimen of *Setina irrorella* ab. *signata*, 5s.; series of *Nola albulalis* (8) and *N. centonalis* (9), £1 12s. 6d. per set; a specimen of *Eulepia cribrum* with white hindwings (Bright, New Forest), 4s.; another, with a pale *Euthemonia russula*, 14s.; two *Euchelia jacobaeae* (one with suffused hindwings, the other with left hindwing yellow, but nervures and base red), 12s.; another *E. jacobaeae* with yellow hindwings (Wicken Fen, 1898) brought lot 238 up to 14s.; whilst some good abs. of *Callimorpha dominula*, *C. hera*, and *Nemeophila plantaginis* produced 10s., £1 1s., 9s., 10s., 10s., 16s., and £1 for successive lots, the *N. plantaginis* looked as if they were worth more; a fine *Spilosoma mendica* ab. *nigromarginata* and other abs. brought lot 247 up to £2 2s. The *Arctia caia* fetched very mixed prices, the first 29 went for 24s., then lot 255 (2), 10s.; lot 256 (2), 8s.; lot 257 (1), £1 12s. 6d.; then 43 for £1 2s.; but lot 265 (1) (Gravesend, 1901) produced £8 8s.; lot 266 (1) (Harwood, East Suffolk, August, 1903), £4 15s.; lot 267 (the ab. *clarki*, figured *Ent. Rec.*, 1909, p. 88), £8 8s.; lot 268 (1) (Harwood, Colchester, July, 1903), £6; then 12 for £1 2s.; lot 272 (3), £2; then 56 for £1 5s.; lot 282 (1) for £2 5s.; lot 283 (1), £2 15s.; then 8 for 3s. finished off this species. Four fine *Arctia villica* produced £1 1s., £1 1s., £2 2s., and £1 6s. each; but the series of *Spilosoma lubricipeda*, *S. menthastri*, and *S. urticae* fetched very low prices.

For the purpose of monographing *Sarrothripus undulanus* (*revayana*), similarly to his treatment of *Peronea cristana*, Clark had collected 352 picked examples, and these were unfortunately split, and not bought, as one had hoped would be the case, by one person in order to treat them as Clark had intended. They were sold as lot 217 (66 specimens), £1 7s. (Bright); lot 218 (79 specimens), £1 5s. (Hanbury); lot 219 (78 specimens), £1 4s. (Hanbury); lot 220 (6 specimens), £3 (Janson); lot 221 (83 specimens), £1 (Hanbury). It is stated in the "Catalogue" that lot 220 contained Curtis' types of ab. *stonanus* and ab. *ramulanus*; one would like to know on what grounds; it is rather improbable, one would suspect, and certainly we should like to know the evidence on which the supposition is based.

Among the Zeuzerids were three interesting examples of *Zeuzera pyrina*, one with the central spots of forewings large and confluent, sold for £2; another with coalesced spots £1 4s., and another with spots large and confluent, £3 15s.

A series of *Laelia coenosa* produced 17s., 14s., 18s., 17s., and 18s. for pairs; and 21s. and 18s. (for 2 ♂ s and 1 ♀); 21s., 16s., and 18s. for 2 ♂ s and 2 ♀ s in each case, whilst 4 ♂ s and 2 ♀ s produced £1 4s.; a dark ab. of *Dasychira pudibunda* (New Forest, 1895) and others, produced £2 10s.; whilst the series of black and intermediate forms of *Psilura monacha* (figured *Ent. Record*, 1892, and of foreign origin), produced 16s. Some good *Cosmotriche potatoria* fetched £1 4s.; a ♂ *Saturnia pavonia*, with obsoletely marked hindwings, and a white ♀, £1 6s.; and

a ♂ *Dimorpha versicolor* with orange-yellow hindwings (Berkshire, bred, 1902), £1 4s.; whilst a *Dendrolimus pini* (stated to have been taken at electric light at Brighton by William Serase, September 3rd, 1894), produced 12s. One feels that one would like to know the nearest continental locality of this species to Brighton. *Drepana harpagula* (Leigh Woods) produced (♂ and ♀) 12s., 2 ♂s 12s., 3 ♂s 14s., whilst 4 abs. of *Phalera bucephala* went up to £2 10s.

The Noctuids produced, on the whole, low prices, among the higher being—series of *Bryophila muralis* and *B. perla* which brought 8s., 13s., and 16s. a series; sets of four *Hyboma strigosa* and seven *Jocheaera alni* 12s., 12s., 14s.; the fine *Peridroma ypsilon* (*suffusa*) ab. *albescens*, £1 2s.; six *Agrotis ashworthii*, 12s.; *A. subrosea* (♂ and ♀), £1 2s., 12s., 12s., and 10s. per pair, £1 (for 4), £1 1s. (for 5). The 12 specimens of *Triphaena orbona* (figured *Ent.*, xxii., pl. vi.) produced only 7s., but *Pachnobia alpina* reached 14s. (6), 14s. (6), 12s. (7); *Xylina conformis* went at £1 1s., £1 10s., £1 4s., and £1 1s. for 3 in each case.

Among the Geometrids, a curious dwarf *Rumia crataegata*, with white hindwings (Berwick, July 7th, 1904), and *Venilia maculata* near ab. *quadrinaculata*, £2 5s.; four more *Rumia crataegata* (one white, one dark, two light), £1 10s.; three aberrations of *Angerona prunaria* produced £2 15s.; a hybrid *Selenia illunaria* × *illustraria* brought lot 521 to 13s.; a pair of melanic *Ennomos autumnaria* (Newman) £1 1s.; a pair of melanic *E. angularia* £1 1s.; *Cleora viduaria* ♂s at 12s., 11s., 12s., 12s., 11s., and 10s. each, 15s. for two; ♀s 15s. and 12s. each, 12s. (2), 10s. (2), 15s. (2), and 14s. (2, with other species); a series of *Hemerophila abruptaria* (84) bred by W. G. Pearce, and described *Ent. Rec.*, x., p. 121, including a gynandromorphous example, produced only 14s.; *Ephyra pendularia* with four picked abs. 18s., and six abs. of *Ematurga atomaria* £1 15s., were among the best. The two days' sale totalled about £490 0s. 0d.

## NOTES ON COLLECTING, Etc.

LATE APPEARANCE OF LEPIDOPTERA IN 1909.—It may be well to note *re* Mr. Prout's observation on *Hipoerita jacobaeae* (*antea*, vol. xxi., p. 245), that when I was at Worthing, on August 14th, I saw a perfectly fresh ♂ of this species on an oak fence near Homefield Park, where there appeared to be little or no ragwort. It struck me that the example was a late specimen of the first brood, as I have never known even odd specimens of a second brood to occur. Many other insects were remarkably late, notably perfectly fresh ♂ *Melanargia galatea*, at Dover, during the second week of August.—C. P. PICKETT, 28, Colworth Road, Leytonstone. November 17th, 1909.

## VARIATION.

SOME MINOR ABERRATIONS OF *COENONYMPHA PAMPHILUS*.—The almost universally abundant little *Coenonympha pamphilus* does not occur in Guernsey, though it is common in the adjacent islands. This may in part account for the attraction it has for me, with the result that, wherever I go, I net many more of this species than I do of other common things. In consequence, I have taken one or two really good aberrations, but, in addition, I have observed three minor departures from the normal which may be worthy of remark. To begin with

the *underside*. I have a specimen from Samaden which has on the primaries an additional black spot surrounded with white above the anal angle corresponding with the apical spot, but smaller; this is not visible on the *upperside*. The form appears to approximate closely to *balearica*, Musch., *Ent. Rec.*, xvi., p. 222. Two others, one Weesen Marsh, and another taken this year (1909) at Digne, are unusual, in that the apical spot in these specimens is duplicated, at least enlarged, by a second and smaller spot beneath which touches it, but is not merged into it, and contains a small white centre. In neither instance is the second spot visible on the *upperside*, thus disagreeing with Rühl's description of *bipupillata*, Cosm. Trifling as this variation is, it must be tolerably rare, as these are the only two I have come across among the many hundreds I have examined. This summer I spent a couple of days at Orta Novarese, hoping to renew acquaintance with a washed form of *Melitaea phoebe* which I found there in 1900, but incessant rain kept all insects under shelter. I came across, however, one beautiful specimen of *C. pamphilus* ♀, of a strong tawny colour, and broad, well-defined, dark border (var. *lyllus* ?), which had special claim to notice. In this example the lower wings on the *upperside* each contain two small, but strongly marked black spots, just beyond the border, as in some specimens of *C. tiphon*, or more exactly in *C. dorsus*, when the normal number of spots is reduced in size and number. These marks are not visible on the *underside*. The chief interest in this aberration was revealed to me after my return home. I have still six specimens of *C. pamphilus* from Orta in my cabinet, taken in May, 1900, and of these I found that one male and one female had these same spots, though not so strongly developed. It appears, then, to be an aberration common in this district, and probably other warm corners of the south side of the Alps. The form seems to be a transition to the var. *thyrsides* as reported by Graves (*Ent. Rec.*, xix., p. 67). —(REV.) FRANK E. LOWE, M.A., F.E.S., Guernsey.

NOTE ON *BRENTHIS SELENE* VAR. *CASTILIANA*, N. VAR.—In a list of insects which I caught at La Granja in 1908, detailed in the *Ent. Record* of this year, p. 65, is included *Brenthis hecate*. A few weeks ago I was preparing to remove these specimens from the store-box to the cabinet, and was at once conscious that I had made a mistake, and that they were not *B. hecate*, but *B. selene*. Nevertheless, they are sufficiently remarkable to, in some degree, excuse the mistake, for they have not a trace of silver or mother-of-pearl, these usually conspicuous spots of the *underside* secondaries being replaced by dull yellow. I had come to get *B. hecate*, and as nearly as I could judge to the very spot, from which, the year before, Mr. Sheldon had recorded that he "netted several examples of *Brenthis hecate*, which was evidently on the wane." These unburnished examples of a *Brenthis* found me, in consequence, an easy victim to their disguise. They do not appear to have a claim to be ranked as var. *hela*, Stdgr., which is spoken of as a variety from Lapland and the extreme north, and which Rühl describes as smaller and darker than the type, and without, or nearly without, the rust-brown spots on the *underside* of the hindwings. In the La Granja examples, these spots are very pronounced, and the more conspicuous as they rest on a much lighter ground than in the type. In size, too, the specimens are above the average. Therefore, until I know what to call them, I shall name them var. *castiliana*. (REV.) FRANK E. LOWE, M.A., F.E.S., Guernsey. November 9th, 1909.



## CURRENT NOTES.

The following is the list of Officers and Council appointed by the South London Entomological and Natural History Society for the current year:—President: W. J. Kaye, F.E.S. Vice-Presidents: A. Sich, F.E.S., and A. E. Tongé, F.E.S. Treasurer: T. W. Hall, F.E.S. Librarian: A. W. Dods. Curator: W. West (*Greenwich*). Hon. Secretaries: Stanley Edwards, F.L.S., etc. (*Corresponding*), and H. J. Turner, F.E.S. (*Reporting*). Council: R. Adkin, F.E.S., S. R. Ashby, F.E.S., E. C. Joy, F.E.S., H. Main, F.E.S., A. M. Montgomery, F.E.S., R. A. R. Priske, F.E.S., and B. H. Smith.

Dr. D. Sharp notes (*Ent. Mo. Mag.*) the capture of *Proteinus crenulatus*, Pand., at Nethy Bridge, in 1906 and 1907, making the whole of the five European species of *Proteinus* British.

Dr. Norman H. Joy adds *Epipeda nigricans*, Thoms. (Blair Atholl, September 5th, 1909), *Lathrobium dilutum*, Erchs. (Dalwhinnie, October, 1909, and Loch Erich, September 20th, 1909), and *Pityogenes trepanatus*, Nörd. (Blair Atholl, September 3rd, 1909).

Mr. W. E. Sharp records the capture of *Diestota testacea*, Kraatz (*D. mayeti*, Muls. et Rey), an exotic species originally described from the East Indies, at Shirley.

Mr. Colbran J. Wainwright adds *Setula grisea*, Mg., to the Tachinids of Britain, from specimens taken by himself, August 4th, near New Milton, Hants, and by Mr. A. H. Hamm, near Oxford.

Mr. Eustace R. Banks shows cause (*Ent. Mo. Mag.*) for considering *Gelechia vicinella*, Douglas, and *G. leucomelanella*, Zell., conspecific. This has been a very general opinion among micro-lepidopterists for many years; we suggested it (*Ent.*, xx., p. 294) more than 22 years ago, after going through Stainton's series with its owner, and without knowing that Zeller had made the same suggestion 20 years before that. Mr. Banks, after a very thorough discussion of the literature, deals with the Stainton specimens, and makes a point (p. 206) of the arrangement of the specimens in the collection under the two names, particularly the *Ragonot* specimens. There is no doubt that the labels truly represented Stainton's opinion of the specimens in 1879 and 1885, written when the two sets of insects were respectively received, but one doubts whether Stainton did not later fully appreciate that these were referable to one species. At any rate, he discussed the matter fully with the present writer in 1887, and, although then still inclined to look on the white markings as in some measure diagnostic, he had already thrown over any doubt as to the two lots of *Ragonot* specimens being specifically different, and it is only fair to state that, when, on a later visit, the question of these *Gelechias* was again discussed, Stainton had practically ceased to believe there was any differential characters between the supposed species. He would no doubt have supported Mr. Banks' opinion of these two insects being co-specific most whole-heartedly.

A tremendous book, weighing several pounds, is *Indian Insect Life*, by H. Maxwell-Lefroy, M.A., assisted by F. M. Howlett, B.A., published under the authority of the Government of India, and to be obtained from Thacker and Co., 2, Creed Lane, London. The preface, under the title of "Acknowledgments," states that the work has been done entirely in India, and most of the plates by native artists. The scheme of classification is set forth in a sort of Index, and after the introductory chapters, the Orders are dealt with in the following sequence—



Aptera, Orthoptera, Neuroptera, Hymenoptera, Coleoptera, Lepidoptera, Thysanoptera, Diptera, and Rhynchota. The book is beautifully printed and exquisitely illustrated, the contents seem happily chosen, and the book reflects the greatest credit on everyone concerned. We are not surprised that Mr. Lefroy is proud of his Hindoo artists—descendants, no doubt, of highly-civilised races when our ancestors were still clad in skins and seated on their haunches in a cave. Anyway, they are well ahead of the best colour-printers that try to illustrate our entomological work in Britain. We should be glad if Mr. Lefroy would let the Publication Committee of the Entomological Society of London know something of cost, etc., for the plates in this work. There are 786 pp., 84 full-size coloured plates and 530 text-figures, and the book is capitally indexed. It is a work entomologists should make a point of seeing; they are not likely to carry it about with them.

Mr. South has, with the aid of Mr. F. N. Pierce (who finds the genitalia distinct), apparently run to earth the Noctuid captured at St. Anne's-on-Sea, noted by Mr. South in 1889 (*Ent.*, xxii., p. 271) as "pale grey," and by ourselves (*Brit. Noct.*, i., p. 140) also as "pale grey," and then under the name of *incerta* as "greyish fuscous, with a slight ochreous (*i.e.*, yellowish) tinge." He finds that these agree with one of the two original examples that were named *guenéei* by Doubleday in 1864 (from Rhyl), and which is now in the British Museum coll. (*via* the "Burney coll."); the other is in the possession of Mr. E. R. Banks, and these, we understand, are also tinged with ochreous; so also is a second example captured at St. Anne's-on-Sea in 1891, *i.e.*, all the four old specimens are now tinged with ochreous. It is remarkable that neither Doubleday, South, nor ourselves saw any yellowish tint in *guenéei* and *incerta* when the specimens were fresh; one suspects, therefore, that this slight ochreous tint is a sign of maturation in a species belonging to a genus that tends a little to grease.

At two or three recent meetings of the South London Entomological Society we have been shown, perhaps a dozen, examples of this insect of the pale grey tint we remember the 1889 (and ?1891) specimens to have had when quite fresh; our description for the *Varieties of British Noctuae* made two years later notes the change. But Mr. South has named these pale examples *baxteri*. It would be unfortunate if the specimens of *baxteri* were to change to *guenéei* in the course of a year or two in the cabinet drawers, but we are afraid they will. We understand that most of this year's captures have been put on the market at a high figure. There is a long range of sandhills on the Lancashire, Cheshire, and North Wales coast; no doubt this species will be found to be widely distributed there.

No. xvii. of the *Mémoires de la Soc. Ent. Belgique* has just been issued, and contains two important papers on Coleoptera—*Revision des Prionides*—3rd mém. *Derancistrines*, by Professor A. Lameere, and *Katalog der Staphyliniden-Gattungen*, etc., by Dr. F. Eichelbaum. The former paper deals with the genera *Derancistrus*, Serville, *Poecilosoma*, Serville, *Calocomus*, Serville, *Pyrodes*, Serville, and *Sobarus*, Harold. The genus *Derancistrus*, Lameere *nec* Serville, has already been shown to be composed of very divergent elements, and the species have been spread among *Prosternodes*, Thoms., *Derancistrus*, Serv. (*sens. restr.*), *Solenoptera*, Serv., *Holonotus*, Thoms., *Flateropsis*, Chevr., and *Sphenostethus*, Hald. All these have been well defined, and

Lameere diagnoses them and divides the species up among them; he also gives in tabulated form a resumé of the genealogy of the groups under these names, and, having shown the value of all this detailed work, and the relationships of the groups, sinks the names entirely as subgenera, so that we read—

Genus: DERANCISTRUS, Serville.

Subgenus: PROSTERNODES, Thoms.

Species: *Derancistrus cinnamipennis*, Chevrolat.

*Derancistrus oberthüri*, Gahan.

*Derancistrus scutellatus*, Gahan.

Subgenus: DERANCISTRUS, Serville.

Species: *Derancistrus anthracinus*, Gahan.

*Derancistrus elegans*, Pal. de Beauv.

Subgenus: SOLENOPTERA, Serville.

Species: *Derancistrus thomae*, Linné.

*Derancistrus parandroides*, Lameere.

*Derancistrus bilineatus*, Fab.

*Derancistrus canaliculatus*, Fab.

etc., etc., etc. That is *Derancistrus*, Serville, whilst standing for the naturally restricted genus, containing *anthracinus* and *elegans*, is also maintained for the whole of the species in the group, in order to maintain the necessary binomial nomenclature to include this name, and thus, in the Catalogue, the whole of this natural grouping is lost. Lameere's diagnoses show distinctly that *Prosternodes*, Thoms., *Derancistrus*, Serv., *Solenoptera*, Serv., *Holonotus*, Thoms., *Elateropsis*, Chevr., and *Sphenostethus*, Hald., are sound sections, and that *Solenoptera*, Serv., does not = *Derancistrus*, Serv., yet, instead of giving these proper generic rank as sections of the tribe *Derancistridi*—he calls the tribe the genus, gives one of the included generic names a double meaning, and then loses the proper genera under the sunken titles of subgenera. What Lameere's classification really shows is—

Tribe: DERANCISTRIDI (=DERANCISTRUS, Lam. nec Serv.)

Genus: PROSTERNODES, Thoms.

Species: *Prosternodes cinnamipennis*, Chevrolat.

*P. oberthüri*, Gahan.

*P. scutellatus*, Gahan.

Genus: DERANCISTRUS, Serville.

Species: *Derancistrus anthracinus*, Gahan.

*D. elegans*, Pal. de Beauv.

Genus: SOLENOPTERA, Serville.

Species: *Solenoptera thomae*, Linné.

*S. parandroides*, Lameere.

*S. bilineatus*, Fab.

*S. canaliculatus*, Fab.

etc., etc., etc. Surely a simpler arrangement, and one that shows the real relationship of the species, *inter se*. Why maintain a binomial nomenclature if the two names are not (1) the specific name, (2) the generic name, uniting the most closely-allied species into the next highest group above species? The species included in the group *Pyrodes*, Serville, also appear to be capable of subdivision into a number of natural sub-groups or genera, and hence *Pyrodes* seems also to be of tribal value.

Dr. Eichelbaum, in his paper, follows the normal and more natural grouping, and we get the STAPHILINIDÆ divided up into—Subfamilies—Tribes—Genera—Species. Here we get no "subgenera." If the sections into which a "genus" has been subdivided by previous workers are not, in the author's opinion, warranted, the names are



dropped, or, if they are considered sound, they are given generic rank. There is, at least, no attempt to diagnose the various sections of a group under different names, show what species belong to each group, and then drop the names as purposeless.

"The egg is green and laid on cabbage." Such was the favourite formula of our earlier entomological authors if they ever mentioned the egg of the particular species of lepidoptera they were describing; a very slightly modified form is sufficient for most makers of entomological books now. Buckler and Hellins first commenced to give short intelligent diagnoses of the eggs of the species of lepidoptera whose biology they attempted to unravel. Edwards did the same, but Scudder went much further, and showed us how to describe the egg so as to bring out its scientific detail. So few, however, were done when Dr. Chapman attempted to show us the value of the egg-characters as an aid to classification (*Trans. Ent. Soc. Lond.*, 1893), that most of us found ourselves in a state of hopeless ignorance concerning the eggs of even the most common species. So far as we were concerned, we found that when we were collecting the material for our *Natural History of British Lepidoptera*, that practically everything had to be done, and, in our very little spare time, whenever eggs of lepidoptera came our way we made a few notes about them, even if only a hand lens was available, and we were wandering from one place to another on our annual summer holiday. This mode of work has naturally been unsatisfactory, but there are many eggs of which these notes are the only descriptions available. As the volumes of the *Natural History of British Lepidoptera* have totalled up, the number of species of which the eggs have been fairly described has been largely increased, and, with the great improvement in photography, Messrs. Noad Clark and A. E. Tonge have revolutionised our ideas of these important structures.

On the continent, Mr. Max Gillmer has continued the work as opportunity has offered, and now we have a volume entitled *Zur Morphologie der Skandinavischen Schmetterlingseier*, by Dr. John Peyron (William Wesley and Son, 28, Essex Street, Strand), dealing with the eggs of a considerable number of species in a really first-class manner. The author gives—(1) Literature. (2) Appearance, shape, and size of egg, with outline sketches. (3) Microscopic structure. (4) Ten excellent lithograph plates (i-x), chiefly dealing with the surface and micropylar structure. If one excludes the references to the pictures of the old masters, at least three-fourths of the other references of any value whatever are to our British magazines and text-books. We welcome Dr. Peyron as a most valuable addition to the small band of workers who do not think the careful description of the eggs of lepidoptera a matter unworthy of serious attention.

We have just received three quite excellent papers from Count Emilio Turati—(1) "Some new forms of Lepidoptera (1905)" with 9 plates (*Nat. Sic.*, xviii., nos. 2-3); (2) "New forms of Lepidoptera (1907)" with 6 plates (*Nat. Sic.*, xx., nos. 1-3); (3) "New forms of Lepidoptera (1909)" with 7 plates (*Nat. Sic.*, xxi.). They are full of most interesting material, which wants careful study, digestion, and consideration. There is so much that wants testing with an abundance of material, and there is a great deal more that will have to be brought into line with work already done, and herein appears to lie the weakness of Count Turati's work, *viz.*, he seems to be altogether wanting in a knowledge of the literature of many of the species with

which he attempts to deal. On the first page that we opened (vol. xviii., pl. 1) we find a newly-named form of *Aporia crataegi*. Surely the diagnosis and figures of this var. *augusta* agree absolutely with ab. *suffusa*, ab. *lunulata*, and ab. *melana* (Brit. Butts., pp. 226-227, 1896); then is not the *Anthrocera trifolii* ab. *incarnata* (xx., p. 15) referable to ab. *intermedia*, Nat. Hist. Brit. Lep., i., p. 487 (1899); and how does *Grammesia trigrammica* var. *erubescens* (xxi., pl. 6, fig. 11) differ from ab. *evidens*, Brit. Noct., i., p. 141 (1891)? Or, how does *Xylophasia monoglypha* var. *sicula* (xxi., p. 89) differ from var. *obscura*, Brit. Noct., i., p. 73? And, why figure (xxi., pl. v., figs. 4-5) *Dasypolia templi* ab. *ochracea*, Brit. Noct., iii., p. 50, as the type of this species, the original description of which we quote (*op. cit.*, p. 50)? And, again, does Count Turati suppose for a moment that his pl. v., fig. 12 answers at all to Guenée's description of *Polia flaricincta* var. *meridionalis* (see Brit. Noct., vol. iii., p. 48)? whilst his figure of the type surely does not satisfy the Fabrician description "fulvo punctatis;" his var. *sublutea* also should be compared with what we have written of var. *meridionalis* (*op. cit.*). In the Geometrids, too, the Count figures (pl. vi., fig. 42) as *Hemerophila abruptaria* var. *theobromaria* our ab. *unicolor*, Ent. Rec., x., p. 172 (1898), and so on *ad nauseam*.

We can only judge the Count's work offhand by what we are really conversant with, and, if he does not attempt to check his own studies in what seems the simple matter of reference to the better-known work relating to the species with which he is dealing, he is surely courting failure; nor is it fair to future workers that they should have to unravel the wholesale synonymy that the Count appears to be creating.

With regard to the two new species of Palearctic butterflies with which the Count deals, much more evidence is wanted in support of both. We have already stated our opinion that *Augiades faunus* is only a form of *A. sylvanus* (Nat. Hist. Brit. Lep., viii., p. 136), and the work we have tested and dealt with above gives us no real confidence in accepting *Argynnis auresiana*, Fruhst., as distinct. Fruhstorfer, who is in possession of 1 ♀ only, and Turati of 1 ♂ and 1 ♀, received from Nissen, of Mustapha, have no doubt whatever of its distinctness. We must await further material and knowledge of the early stages. We shall probably refer later to other conclusions put forward by Count Turati.

It is with the greatest regret that we have to announce the death of the Rev. Henry Charles Lang, M.D., Vicar of All Saint's Church, Southend, at the age of 59, on December 20th. His only entomological work of importance, *The Butterflies of Europe*, was published in 1884, all that he has done since being comprised in magazine notes of his holiday trips to various parts of the continent, useful so far as additions to our knowledge of the geographical distribution of some of the butterflies is concerned, but containing little in the way of observations on the habits of the insects recorded. Dr. Lang has been, however, in very indifferent health for a considerable time, although the sudden breakdown came rather as a shock to his friends. A short time since, his collection of Palearctic butterflies was dispersed at Stevens' sale-rooms, but he was already busily engaged on the formation of another collection, and had made several trips abroad with this object in view. Our deepest sympathies are offered to the widow in her great trouble.



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GEORGE HENRY VERRILL, M.P., F.E.S.

*The Entomologist's Record, etc., 1910.*

VERRILL GEORGE HENRY

**Agriades polonus, Zeller, a British insect, with some account of the recorded examples of this form.**

By J. W. TUTT, F.E.S.

We have already noted in considerable detail (*A. Nat. Hist. Brit. Butts.*, iii., pp. 323-4) that this is a British insect. On May 20th, 1893, we captured at Cuxton, among *A. thetis*, a ♂ example of a "blue" that, in size, shape, and general appearance, might be *A. coridon*, but which approaches more closely *A. thetis* (*bellargus*) in colour. This example was exhibited at the meeting of the Entomological Society of London, April 11th, 1894, as a possible hybrid of *thetis* × *coridon*. Another specimen, captured at Airolo in June 1907, also among *A. thetis*, was exhibited by Mr. Dadd, at the meeting of the Entomological Society of London, October 21st, 1908, and again the suggestion was made that it was a hybrid *thetis* × *coridon*. Keynes recorded (*Ent. Rec.*, xx., p. 178) that, on June 25th, 1907, he captured, with an abundance of typical *A. thetis*, two fine specimens of *A. coridon* ab. *corydonius*, which could not possibly have been the latter, but which we now know (*teste* Wheeler) is the same insect as those noted above. In the British Museum collection, when studying the material for our work, *A. Natural History of British Lepidoptera*, we discovered Zeller's original type of *polonus* from Posen, described *Stett. Ent. Zeitg.*, 1845, p. 351, and which he said he should have considered a hybrid between *thetis* × *coridon*, had he not known of three exactly similar examples. Herrich-Schäffer then figured (*Sys. Bearb.*, i., pl. xci., figs. 432-3) an insect which, he says (supp., p. 27), was drawn from a specimen received from Zeller. Then Gerhard figured (*Mon.*, p. 21, pl. xxxvii., figs. 4a-b) the entirely different eastern form of *A. coridon* (now known as var. *corydonius*) under the name *polona*, whilst Staudinger recorded (*Hor. Soc. Ent. Ross.*, xiv., p. 244) the capture of a ♂ *polonus* on June 23rd, 1875, at Kerasdere, in Asia Minor, flying with typical *A. thetis*, but then, again, he (like Gerhard) unfortunately mixes it up with *A. coridon* var. *corydonius* from the Taurus mountains, citing both under the name *polonus*: he also notes (*op. cit.*) another possible specimen of the real *polonus*, Zell., captured on the Pomeranian border of Silesia, and supports Zeller's view of a hybrid origin for this form. With this information at disposal, and knowing that Zeller's original types came from Germany, Staudinger, in 1871, referred (*Cat.*, 2nd ed., p. 12) *polonus*, Zell., to *A. thetis*, as a variety, and unaccountably gave only "Asia Minor" as a locality for it, and from this blunder spread the general error of referring the blue forms of *A. coridon* (the true *corydonius*, H.-Sch., and often *caucasica*, Led.), from Asia Minor, to *polonus*, Zell., an error intensified in the 1901 *Catalog* (3rd ed., p. 86), where Staudinger gives, as the range of Zeller's *polonus* (still accounted a var. of *A. thetis*), "Eastern Prussia, Aragon, Taurus, Syrian Mts.," so that, on this occasion, the true *polonus*, *A. coridon* var. *hispana*, *A. coridon* var. *corydonius*, and *A. coridon* var. *syriaca*, all got jumbled into the *A. thetis* var. *polonus* of Staudinger. There appears to have been no other British example of this species yet recorded, except the Cuxton ♂. We had wondered whether Pickett's example of *A. coridon*, described as of "*bellargus*" tint (*Proc. Sth. Lond. Ent. Soc.*, 1906, p. 47) was one, but we have seen this, and find it merely

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a specially bright ♂ *A. coridon*: South speaks of a greenish-blue example of *thetis* (Ent., xx., pp. 80-81) from Dover, but this is, one supposes, as no special mention is made of its similarity to *A. coridon* in shape, merely a form of *A. thetis* (*bellargus*) as South says. Odd specimens of *polonus*, Zell., however, appear to be picked up occasionally here and there on the continent, wherever *A. thetis* and *A. coridon* occur together. Wheeler mentions (Ent. Rec., xxi., p. 250) the capture of five examples at Assisi in June-July 1909; Stefanelli records (Bull. Soc. Ent. Ital., xxxii., p. 389) two very beautiful ♂s, one taken in the plain of Mugnone at the end of July, the other on the hills to the east of Fiesole at the beginning of August, of a colour between that of *A. coridon* and *A. thetis*, and which he considers to be of hybrid origin. Favre notes (Mitt. Schw. Ent. Gesell., xi., p. 4) under the name *caucasica*, the capture of a fine ♂ above the Château de la Bâtiaz, on the Ravoire side; Oberthür records (Etudes, xx., p. 21), also under the name *caucasica*, the capture of two examples in the Pyrenees, one from Vernet-les-Bains (Pyrénées-Orientales), the other from Canterets (Hautes-Pyrénées); whilst Forbes (Ent. Mo. Mag., xv., p. 277) mentions the capture, in 1878, of a ♂ *A. coridon*, remarkable for the brightness of its blue which resembles that of *A. thetis*, on the Bella Tola, at about 6500ft. elevation; Muschamp notes (*in litt.*) one taken at Digne, and Rosa records what appears to be another as *A. var. corydonius* (Ent., xxxv., p. 96), at Pfyn, in July 1900. Reverdin speaks (*in litt.*) of one from Brides-les-Bains, July 19th, 1904, and Blachier mentioned another from the same place, July 1st, 1891, in which he notices the *eros*-like coloration, and states that he has seen, in the collections of friends, two other examples taken in the Geneva district, one in the Bois des Frères, and the other at the foot of the Salève. The most recent doubt arises over Preissecker's *hafneri* [Verh. z.-b. Ges. Wien, p. 68 (1908)], which is obviously *polonus*, Zell. He records examples (1) from Feistenberg, taken June 19th, 1900, (2) another at Oberfeld near Wippach, June 28th, 1907, by himself. At the meeting of the Vienna Society, March 6th, 1903, the first was referred to *polonus*, Zell., but this did not satisfy Preissecker, who forthwith redescribed it; one suspects Preissecker's dissatisfaction arose from the fact that he did not know the true *polonus*, Zell., and was comparing the 1900 example with one of the Asia Minor forms, *corydonius* or *caucasica*, which are now generally but erroneously doing duty under Zeller's name, whilst the Spanish *hispana* are posing as *corydonius*. Another example of *polonus*, Zell., in the British Museum coll., came from "Shar Deresy, North Syria," so that it seems possible for an odd example to appear wherever *A. thetis* and *A. coridon* occur together. We have left *calydonius*, Lowe, out of consideration, as Wheeler is in doubt whether it is to be referred here. So far, too, we have only dealt with the ♂ form, but, in working over our material very closely, we found, among our *coridon* ♀s, an undoubted ♀ of this form, captured at Neu Spondinig, August 12th, 1909, with beautiful violet lunules edging the marginal spots of the hindwing. It is quite distinct from any other example of either species that we have ever seen, and its reference to *polonus* has been immediate by every expert to whom it has been submitted. As bearing on the possible hybrid origin of *A. polonus*, we would call attention to



the facts that (1) The undoubted specimens enumerated above, have all been taken where both species occur. (2) The ♂ genitalia are almost precisely alike in both species. (3) Sabine notes (*Proc. Sth. Lond. Ent. Soc.*, 1886, p. 61) that he once took a ♂ *A. thetis* in copulā with a ♀ *A. coridon*. (4) The chief (? only) foodplant of both species, in places where both occur, is *Hippocrepis comosa*. Now that the various blue races of *A. coridon* found in Asia Minor and Spain have been referred to the names originally given to them, and *polonus*, Zell., retained for the form that Zeller described, it would be interesting to learn whether any other examples than those noted above are to be found in any British or Continental collection.

### Notes on *Melampias epiphron*, its habits and habitats in Cumberland.

By GEORGE WILKINSON.

*Melampias epiphron* is one of our characteristic Cumbrian insects, and for this reason it has always possessed a special interest for me, and these stray notes may, I hope, be found of interest to others. *Melampias epiphron* is essentially a mountain species, and, in Cumberland, is seldom taken at an elevation of less than 1500 feet. Below this height it may be taken rarely, and, on one occasion, I noticed an individual of this species as low as the foot of Green Gable, near the farm of Seathwaite; but the occurrence of specimens below the 1500 feet level, is probably due to their being blown down by strong winds. With regard to the special nature of its habitat, an erroneous impression seems to be prevalent. The general impression is that this species is partial to high-lying, marshy places. Stainton, in his "Manual" says, "always at a great elevation in marshy hollows on the mountain-sides;" and an entry in a MS. diary in my possession reads, "June 30th, 1888, *E. cassiope*, at the head of Teesdale, on marshy, peaty ground;" but my own observations do not confirm those just quoted, nor do they support the general impression that *M. epiphron* shows a preference for marshy ground. On several of our Cumbrian mountains it certainly does occur in marshy places, but it appears to have a stronger partiality for dry, stony places; for, in the latter localities, one can always find it in greater abundance. It is found in some numbers all around Styhead and Sprinkling Tarns, but it is much more abundant on the rough boulder-strewn ground, which surrounds the foot of Great End and Sprinkling Tarn, than on the more boggy ground about Styhead Tarn.

As regards the distribution of *M. epiphron* in Cumberland, it may be said to occur on all our Cumbrian mountains possessing the requisite elevation and suitable ground. Its headquarters are undoubtedly at the head of Honister Pass, and behind Honister Crag. On Dubs Moor, near the Drum-house—or Windlass-house—belonging to the Slate Quarries, the species abounds in company with *Nemeophila plantaginis* and *Crambus ericellus*. *M. epiphron* is not uncommon on Helvellyn, and all around Ambleside; it is very well-established on all sides of Scawfell, Great Gable, and the Haystacks; and the area of its distribution extends almost without a break from Grasmere on the east, to Ennerdale Water on the west. At Styhead and Honister at the end of June and throughout July, I have collected *M. epiphron* under the most diverse climatic conditions, and have been able to take specimens even on the wettest days. On wet, dull days,

it may be taken by opening and searching the tufts of grass which grow on the mountain sides; the number taken by this method averaging about ten in an hour. *M. epiphron* is on the wing as early as 6.40 a.m., and continues in flight until about 4.0 p.m.; there is a slight break about noon, and it appears to be most abundant between two and four in the afternoon. After the latter hour, the numbers seen in flight gradually decrease, and they can then be found at rest on the grass stems. As evening draws on, they make their way into the centres of the grass-tufts, and can then only be found, as on wet days, by opening and carefully searching the tufts of grass. On a fine, bright day, in suitable localities, one may be sure to find *M. epiphron* gently flitting to and fro like flakes of soot carried by the breeze; but sunshine is necessary to tempt the species take to flight. I have noted its habits on days with dull and bright intervals, and have found the insects during the dull periods sitting low amongst the herbage, very often on the flowers of *Tormentilla*, with wings widespread, waiting for the sun to break forth. As soon as they feel the influence of the sun's rays, they close and open their wings a few times before gently taking flight. To and fro they flit, generally about two feet above the ground. The flight is somewhat weak, and *M. epiphron* would be an easy insect to capture, but for the fact that there is generally a breeze blowing more or less strongly in the localities inhabited by the species, and the insect either permits, or cannot prevent, its being carried by the breeze, very often quite out of the range of sight.

It is generally between two and four in the afternoon, the favourite time of flight, when pairing takes place. Apparently the ♀ is not possessed of strong powers of attraction, for only once have I noticed more than one ♂ attracted by a "calling" ♀, and, in this instance, as soon as pairing was accomplished, the second ♂ settled within a few inches of the paired insects, and shewed no further interest. In the case of *M. epiphron*, the courtship is very simple, and is quite devoid of those aerial evolutions or other elaborate preliminaries exhibited by some species of *Rhopalocera*. The ♀, when "calling," sits low on a grass stem, and appears very much agitated, constantly moving her body, both in a lateral and vertical direction. As soon as the ♂ appears on the scene, he also exhibits much agitation, but, gently fluttering down, takes a few short flights from one blade of grass to another, and soon finds the ♀. Up to the point of actual contact, the ♀ has had its wings fully expanded, jerking them slightly at intervals, but, upon copulation taking place, it immediately folds them over its back. The insects appear to be very sluggish when paired, for several times I tried unsuccessfully to make a pair fly in the hope of finding out which sex would lead when they took flight.

It is by no means a difficult matter to induce the ♀ insect to deposit ova; in fact it is not at all unusual to find ova in one's collecting boxes after a collecting expedition, and, in this connection, I should like to record the fact of a number of ova being laid by an enclosed ♀ in a small glass-topped box between 9.30 p.m. and 6 a.m., on July 23rd-24th, 1907.

With a view to observing the ovipositing habits, I placed some ♀s which I took on July 21st, 1907, in a glass-sided cage containing a sod of grass, and placed the cage where it would receive the sun's rays. On July 22nd, only one ovum was noticed; on the 23rd, seven ova



were seen; but on the 24th, about one hundred ova were counted. In the process of ovipositing, the ♀ usually alighted at the top of a blade of grass, which it gradually descended head downwards until it approached the base, when it would turn quickly upwards, attaching an egg near the roots, and usually well hidden from view. The ova were laid singly, and, only in two instances, did I find two ova in contact, but whether these were laid on separate occasions or not, I cannot state. The most remarkable feature about the ova was the variation in their size, some being quite twice as large as others. The ovum is about twice as long as it is broad, and is delicately ribbed longitudinally, with faint reddish spots showing between the ribs. The newly-laid ova were of a bright canary colour, but very gradually they became darker, until, by the third day, quite a perceptible change in coloration had been effected. On the seventh day some of the larger ova still retained their yellowish coloration, but the majority at this time were of a dull greyish colour, with a faint inclination to a reddish tinge. On August 8th the ova were of a dark greyish-blue colour. The following day it was possible to trace the outlines of the enclosed larvæ through the egg-shells, and, on August 10th, the larvæ commenced to emerge. The duration of the egg state was thus from eighteen to twenty-one days. The young larvæ invariably ate a small portion of the egg-shell whilst hatching, and the remaining egg-shell appeared quite transparent. To the naked eye, the newly-hatched larvæ seemed to be of a pale putty colour, the head appearing disproportionate on account of its being broader than the body. With the aid of a lens the colour and markings were more distinctly made out, and it was seen that the young larva was light grey in colour, with a dorsal line of a slightly darker grey, extending from the head to the last segment; the spiracular line appeared very distinct on account of its being flanked on each side by a much lighter line; there was a small black spot on each segment above the spiracular line, and on the face were two black spots. I posted the young larvæ to Mr. Alderson, who had been successful in rearing the insect from ova the previous year, but owing to an accident in transit, all the larvæ were dead on arrival.

Even in the breeding-cage, the larvæ are difficult to distinguish from their surroundings, but, in their natural habitat, it is a much more difficult matter to detect them, and the stunted nature of the grass renders it almost impossible to sweep for them. An all-night search for the larvæ upon the mountain sides is not a very enjoyable occupation for the entomologist, nor has it the compensation of being profitable. I have spent several nights upon our Cumbrian mountains working for lepidoptera, and would strongly advise anyone who intends working elevated ground after nightfall to select fairly level ground for this purpose, unless one is prepared to take the element of danger which is always present when working rough elevated ground in the darkness. I have very lively recollections of one of these nocturnal expeditions when, on a damp and misty night, I lost my bearings, and judged it prudent to squeeze myself in between two boulders, and there await the coming of dawn. When sufficient light came to enable me to distinguish my surroundings, my feelings can be imagined when I found myself on the verge of a precipitous face of



rock, down which I might have plunged through a single careless step.

In specimens of *M. epiphron* from Cumberland, a great range of variation is noticeable. I have seen specimens ranging from ab. *obsoleta*, Tutt, which is quite devoid of the usual fulvous band on the upperside, to a form in which the fulvous area is greatly extended. In a ♀ form which I now possess, nearly the whole area of the upper surface of its wings is suffused with fulvous, and the usual black spots are large and very distinct. I have also a specimen of which the fore- and hindwings on the left side are bleached, reminding one of the bleached aberrations of *Epinephele janira*. Typical *M. epiphron* are not commonly met with in Cumberland, the prevailing form being ab. *cassiope*, Fab., in which the black spots are devoid of white centres. Mr. Beadle, I believe, records the occurrence of the type in Cumberland, as being in the proportion of one in a hundred. The ♀ insect is generally slightly larger than the ♂, and its wings differ in shape in possessing a much more rounded outline than those of the ♂. Scotch specimens of *M. epiphron* are slightly larger than those from Cumberland, and the fulvous coloration appears of a brighter hue. I took a series of this species some years ago in Perthshire, on Ben Ledi, and what I saw of the insect in this particular locality, left me with the impression that Scotch *M. epiphron* vary quite as much as, or even more than, our Cumbrian specimens. Irish specimens I have not yet had the pleasure of seeing.

In the localities frequented by *M. epiphron*, one may usually meet with a few more interesting species to which it may not be out of place briefly to refer. *Nemeophila plantaginis* is usually common and variable, and ab. *hospita* is by no means uncommon. The larvæ of this species can be freely taken, and often a fair percentage of these produce ab. *hospita*. *Hadena contigua* is not uncommon, and may be found sitting on the rocks. In searching the faces of the rocks for the latter species during the daytime, one is almost certain to find *Cidaria salicata* sitting on the rocks; but it is not so easy to capture, as it flies off directly one approaches, and must be netted as it takes flight, for the nature of the ground is all in favour of the insect, and if once missed it seldom offers a second opportunity of capturing it. At dusk it can be found flying freely. Towards the latter part of June, *Crambus furcatellus* can be taken, and in July one can rely on finding specimens of *Crambus ericellus*. The latter flies freely from about 1.30 until 4.0 in the afternoon, while the former can probably be best taken from 7 a.m. until 9 a.m., when one can rely on finding it sitting on the tops of the grass-stems. Besides the species mentioned, several local micros are found more or less commonly resting on the rocks.

### Diurni at Reazzino near Locarno.

By (Rev.) F. E. LOWE, M.A., F.E.S.

Bellinzona being a convenient centre for various places of entomological interest, we stayed for a week at the Hotel de la Gare. I found myself too early for much success in excursions made to Monte Bré and the Upper Misox Valley, but at Reazzino, when weather permitted, had excellent sport. I spent some hours at the latter place each day

of June 25th, 27th, 28th, and July 2nd. My hope was that as the season was late, I might be in time for the spring brood of *Melitaea britomartis*. The species was fairly plentiful, but very worn, and though I netted some dozens, only three males and five females were worth bringing home. I tried in vain to obtain eggs from some worn females, and think the failure was probably due to the fact that they were too wasted, and the better specimens I was loath to risk. What struck me most was the very large variety of insects it was possible to obtain in an hour or two, remembering, of course, that collecting here differed from two hours' mountain entomologising, in that it was all done at the same altitude. The weather, too, was broken and uncertain, and the season decidedly backward. The list of insects observed or captured is, I think, sufficiently long to be of interest, for, though Reazzino has been often visited, I do not know that a record has been made of its butterflies at midsummer. My own visits to the locality have always been made in the late summer. *M. britomartis* is, I should say, fairly common, but not abundant. In habit it seems to be a less active flyer than *M. athalia*, and to fly persistently at a lower level, keeping very near the ground, and preferring the sides of ditches and the edge of the marshes which lie under the hills of that part. On the other hand, the only other butterfly that I particularly wanted—*Scolitantides orion*—has a predilection for the dry ground and rocks just above the path which skirts the cliffs. It never, or rarely, comes down with the other "blues" to damp places on the road. I have noticed the same peculiarity in the Val Strona, Val Anzasca, and at Crevola. This species was in magnificent condition, and mostly very large, and with a much more brilliant orange band, and more heavily marked with black on the underside than in the autumn brood, which I have taken here. But here there were small examples hardly more than three-fourths the size of the giants which appeared to be normal for the spring brood. Thus the measurements ranged from 35mm. to 25mm. in both sexes. *Argynnis adippe* was almost without exception, in the males, var. *cleodora*, in the pink of perfection. One very beautiful specimen has the underwings of a dark, but bright, ochre colour, instead of the usual strong primrose tint. And this colour lies uniformly over the whole surface of the disc of the wings, only broken by the veining, i.e., there are no lighter spots, or faint green shading as in others. The same colour is also reproduced on the tips of the upperwings. This distinction is difficult to describe, but it is very apparent when the specimen is seen in a series. The females had hardly emerged; I took one fine typical example. I ought, perhaps, to add that *Melitaea athalia* was generally remarkably fine, both as to size and colouring. This is interesting, because Mr. Wheeler, to whom the specimens were submitted, notices it with surprise in the first number of the *Entomologist* for this year. He knows Reazzino as well as anyone, and *M. athalia* better than most, and his experience of specimens from Cadenabbia and Reazzino, had led him to the conclusion that they confirmed the opinion of Rühl and other Swiss authors, that there is a tendency in this species to decrease in size in Tessin, and the south of the Alps generally. The following is a complete list of the butterflies observed at Reazzino, June 25th-July 2nd, 1909:—

URBICOLIDES.—*Erynnis althaeae*, *Hesperia alceus* var. *fritillum*, *H. malvae*, *Argiades sylvanus*. RURALIDES.—*Callophrys rubi*, *Heodes*



*virgaureae*, *Lowia alciphron* var. *gordius*, and var. *intermedia*, *Rumicia phlaeas* (very large and common), and *Plebeius argus*, *Scolitantides orion*, *Aricia astrarche*, *Polyommatus icarus*, *P. escheri*, *P. hylas*, *Agriades thetis* (*bellargus*), *Cupido minimus* (very fine), *Celastrina argiolus*. PAPILIONIDES.—*Iphiclides podalirius*, *Papilio machaon* (dark). PIERIDES.—*Aporia crataegi*, *Pieris brassicae*, *P. rapae*, *P. napi*, *Leptosia sinapis*, *Colias hyale*, *C. edusa*, *Gonepteryx rhamni*. NYMPHALIDES.—*Brenthis selene*, *B. dia*, *Issoria lathonia*, *Argynnis aglaia*, *A. adippe* and var. *cleodora*, *Melitaea phoebe*, *M. didyma*, *M. dictynna*, *M. athalia*, *M. britomartis*, *M. parthenie* (one worn), *Pyrameis cardui*, *P. atalanta*, *Vanessa io*, *Aglais urticae*, *Polygonia c-album*, *Melanargia galathea*, *Satyrus hermione*, *S. semele*, *Pararge maera*, *P. megæra*, *P. var. aegerides*, *Epinephele jurtina*, *Enodia hyperanthus*, *Coenonympha pamphilus*.

### Moles'-nest Beetles in the Harrow District.

By HEREWARD C. DOLLMAN, F.E.S.

The difficulties of "moleing" in the meadowland of Perivale, Sudbury, and Harrow, does not by any means arise from the paucity of nest-hills; rather, indeed, from perplexity as to where to start one's operations, so numerous are nest-mounds, sometimes from five to seven in one field. The nests do not apparently contain a great number of forms; this is to a great degree compensated for by some of them occurring in considerable numbers.

ALEOCHARA SPADICEA, Er.—This species is certainly rare, perhaps not more than four or five have been met with.

ALEOCHARA SUCCICOLA, Th.—This species is decidedly scarce.

OXYPODA SPECTABILIS, Märk.—I was most delighted to secure a specimen of this fine beetle from a very dark "leaf-nest." I believe this constitutes the first record for *O. spectabilis* as a "mole" species.

OXYPODA LONGIPES, Muls.—This is, with the exception of the *Heterothrops*, quite the most abundant species. It seems to prefer the leaf-nests, from which I have sometimes taken from twelve to fifteen to a nest.

HETEROTHROPS NIGRA, Kr., is nearly always present, frequently in profusion.

QUEDIUS LONGICORNIS, Kr.—This fine *Quedius* is by no means uncommon in the nests around Sudbury and Harrow, although as yet I have not taken it in the Perivale district.

QUEDIUS VEXANS, Epp.—This species is frequent in nests at Perivale, sometimes six or eight occurring in one nest. It would seem to take the place of *Q. longicornis* at Perivale, and gradually to become more and more scarce towards Sudbury; it is very rare at Harrow, the focus of *Q. longicornis*.

OXYTELUS SCULPTURATUS, Gr., and *O. tetracarínatus*, Block, are both fairly frequent. At present all my small *Oxytelus* have proved to be the common species.

CHOLEVA ANGUSTATA, F.—I took two ♂s and one ♀ from a nest near Harrow.

CHOLEVA NIGRITA, Er.—A rare capture; only a few examples have been met with.

This concludes the roll of species at present noticed in the district, the result of two expeditions on January 19th and 22nd, 1910, each of only a few hours.



## Lepidoptera in Gloucestershire: The Wye Valley in 1909.

By J. F. BIRD.

Not having spent so much time in the pursuit of lepidoptera as in former years, I am not a fair judge as to whether the season 1909 here, in the Wye Valley, was a good or a bad one entomologically. Treacling was useless until September, ivy blossom was an absolute failure owing to the inclement weather we experienced during the autumn, and larvæ, with the exception of some of the garden pests, were mostly conspicuous by their absence; yet when I sallied forth with my net it generally came in for a good deal of use, and, on many a night, moths, chiefly commoners I am sorry to say, trooped into the house, attracted by the lamps, so, on the whole, I found the past season fairly productive, although I cannot report captures of any of the recognized lepidoptero-logical prizes.

The following is a list of the lepidoptera captured or observed, with a few notes inserted here and there which I hope will be found of interest. Unless otherwise stated, all the species mentioned were met with in the parish of St. Briavels in Gloucestershire.

DIURNI.—*Adopaea flava*. *Argiades sylvanus*.—I took two males so very different from one another that I think they may, perhaps, be worth mentioning. One is rather larger than usual, the forewings are narrow, long on the costa and pointed at the apex, and the outer margins of all the wings are very straight, giving to the butterfly an extremely angular appearance; colour of wings light golden-brown, not very different from the fulvous markings, but darkening slightly towards the outer margin, where they are edged, as usual, by a dark brown line, and the fringe is pale ochreous. The other has well-rounded wings, the colour a dark, rich brown with a smoky-brown fringe; it is much the darkest specimen we have in our cabinet, while the first one described is the lightest. *Hesperia malvae*, *Nisoniades tages*. *Eumecia phlaeas* was more abundant during August and September than at any other time of the year, and was still to be seen during the first week of October. An ochreous ♀ taken on May 24th is probably referable to *ab. intermedia*, although the ground colour can hardly be described as brassy; and on August 31st I took an example of *ab. radiata* ♂ at rest, the marginal band on the hindwings being reduced to a few copper streaks. *Callophrys rubi*. *Bithys quercus*.—I took one ♀ I saw fly from an oak to a larch, attracted thither by the presence of honeydew; and I was interested early one morning, while fishing, to see one, or perhaps two, of these little butterflies flying about and settling on the reeds by the riverside. *Celastrina argiolus*.—Both broods. *Polyommatus icarus*, like *E. phlaeas*, was especially common during August and September, and stragglers were to be seen on the wing during the beginning of October. *Pieris brassicae* was only too abundant, to the detriment of the vegetable garden. A villager remarked to me, at the same time pointing to a regiment of the larvæ demolishing a cauliflower, "I fancy butterflies has something to do with them blessed things," but not feeling altogether satisfied with his theory, added cautiously, "leastways to a certain extent." During October the fullfed larvæ were to be seen crawling along the ground some distance away from the garden *Brassica*, up trees, outbuildings, the sides of the house, in fact, almost everywhere; nearly all my

windows had lines of web spun on the panes of glass, showing where larvæ had travelled upwards, and they even entered the house to pupate on the window frames and ceilings. Luckily, *Apanteles glomeratus* was ready for them, and I should imagine a good percentage was accounted for, judging from the numerous patches of yellow cocoons everywhere. Besides the cocoons of the parasites, I was rather surprised to find several pupæ of the Pierids on tree-trunks, suspended below the lower branches and a few even attached to the upper cladodes of *Ruscus aculeatus* in the shrubbery. *P. rapæ*, *P. napi*, *Euchloë cardamines*, *Gonepteryx rhamni*. *Polygonia c-album* keeps more to the warmer slopes of the valley, but I met with two specimens of the second brood about 500 feet above sea-level going to heather blossom. *Aglais urticae* was exceedingly common, and a large flowering privet-bush in my garden was an interesting and pretty sight with these gay butterflies swarming on it, in company with other common butterflies, and a multitude and variety of bees and flies. A week or two later, *Vanessa io*, also very common, frequented the same bush in numbers. *Pyrameis atalanta* was not uncommon about the fallen fruit in October. *P. cardui*.—I only saw one, a fresh-looking specimen flying round some thistles by the riverside, on August 27th. *Dryas paphia*.—I saw one only, a ♂, extracting the sweets from the privet blossom in my garden. My father tells me he found it rather less common on the Monmouthshire side of the river. *Argynnis adippe*. *Brenthis euphrosyne*.—Towards the end of May, I had the great pleasure of seeing this species in countless numbers swarming in some lately cleared woodland, and also on the rough, heathy, and bushy slopes of the valley. Heaps of dry faggots, trimmings from the felled timber, partly overgrown with brambles, honeysuckle, and various other plants, were a great attraction to this butterfly, round which they loved to flit, frequently settling on the dry sticks with wings displayed to enjoy the warmth of the sun. I was interested in seeing how "tame" this species is, and how slowly it flies, when in the company of a multitude of its own kind; so different from the swiftness of casual specimens observed during a poor year, or wanderers from their special haunts. I kept a good lookout for aberrations, and took one, in shocking condition, with the spots in the basal area of all the wings much enlarged and coalescing; but the majority were disappointingly typical, and did not vary much excepting that on the upperside the number of spots in the row between the basal markings and the border varied on the hindwing from five to six, the upper one being sometimes absent; and, on the underside, the corresponding row on the forewing varied in a similar manner, but, in this case, it was the lowest spot which was not always present. On May 24th I spent some time studying the habits of the females when ovipositing. Mr. Tutt notes (*Ent. Rec.*, xix., p. 232), when observing this butterfly for the same purpose, that he found several eggs on violet, although the actual operation of egg-laying was not observed. I was lucky enough to see two females oviposit, yet did not see either do so on violet. The butterfly floats very leisurely round and about the bushes, skimming just above the tops of the herbage, seeking a plant to suit her purpose, and considering she does not invariably select the pabulum of the larva, takes great pains in making her choice. After alighting on a plant, evidently found to be suitable, she rests so that the sun shines on her outspread



wings, then curving her abdomen, deposits one or two ova on the under-surface of a leaf; when more than one, placing them side by side, but not touching. They apparently oviposit on any small plant in the neighbourhood of the foodplant, choosing those growing in well-sheltered nooks among bushes, thus placing the ova in spots where violets flourish luxuriantly. The first female I observed doing this, laid a single egg on a straggling plant, I think a species of chickweed, but, not being in flower, I was unable to identify it; and the other deposited two on a tiny leaf on a small plant of ivy. The young larvæ hatched out 24 days later, one only eating its eggshell. They soon began to nibble at the violet leaf I gave them, and two or three days after hatching out, commenced eating the leaf at the edge. They are not very active, and, when disturbed, immediately tumble off the leaf and curl themselves into a ring, but soon unroll and crawl in a leisurely manner. At the beginning of August, two of them stopped feeding to hibernate, and shrivelled up to  $\frac{3}{16}$  in. long; the remaining larva continued to feed well, and I was hoping to succeed in rearing the butterfly the same year, but a fortnight later, when it was about half-an-inch long, this also ceased to eat, and shrivelled up to a stubby, black larva, half that length. *B. selene*.—One male I captured is a rather nice specimen, as the black spots parallel with the outer margin are larger than usual. It was curious that I only saw one female, although I was particularly looking out for specimens of that sex, yet I could have obtained plenty of males. *Pararge egeria* was, I am glad to say, common, especially during the latter end of the summer. It has, until last season, been getting more and more scarce every year since 1904. *P. megaera*, *Epinephle ianira*, *E. tithonus*. *Enodia hyperanthus* was much less abundant across the river at Tintern and Llandogo. It is not so plentiful on this side. *Coenonympha pamphilus*.—In August I took a freshly emerged ab. *ocellata*; the ocelli on the underside of the hindwings, are very conspicuous.

**HETEROCERA.**—*Amorpha populi*, *Sesia stellatarum*, *Anthrocera filipendulae*, *A. trifolii*.—Besides seeing a few imagines in the neighbourhood, I bred a ♀ from a solitary larva found in one of my meadows where I only saw *A. filipendulae* on the wing. *A. lonicerae*.—I accidentally netted one at dusk whilst attempting to capture a Noctuid flying low over heath; the only specimen we have met with in the Wye Valley district. *Hepialus lupulinus*, *H. sylvinus*. *H. humuli* was most abundant, and the larvæ and pupæ dug up in quantities while putting a much-neglected garden into order. *Lithostia lurideola*.—I found two of the larvæ "grazing" in the company of a "flock" of *Nudaria mundana* larvæ on the minute lichens on a stone wall. *Setina mesomella*. *Euchelia jacobaeae* swarmed, commencing to appear in mid-April (I did not note the exact date, but it was during the "teens" of the month) and were observed until July 24th; nearly every ragwort plant was tenanted by the larvæ, and even an edging of *Cineraria* in my garden was attacked. During the winter months I found several pupæ under the top layer of stones on the "dry walls" round the fields, from which I bred this species. *Nemeophila plantaginis*.—My father netted several and saw others flying in the sunshine in Llandogo, but I did not come across a single specimen, although collecting in what appeared to be suitable localities on this side of the river. *Phragmatobia fuliginosa*.—One ♂ was attracted to the house by

light on August 7th. *Spilosoma lubricipeda*, *S. menthastri*, *Dasychira pudibunda*, *Orygia antiqua*. *Demas coryli*.—Until last season, all the larvæ I have found of this species have been very plain, practically unicolorous with a more or less smoky line down the back and always on beech. In September I found, on birch, a beautifully variegated larva which I describe: Dorsal band wide and black, rather lozenge-shaped at each segment, the outline well-defined; a wide band of the same hue along each side joining up with the dorsal band at the 5th segment onwards; between these two bands a narrow streak of buff-coloured, transverse striae, intersected by a thin, wavy, black line, and rather interrupted at the 10th and 11th segments by a smoky-black clouding; below the band along the side, commencing about the middle, are six snow-white, diagonal and rather hook-shaped protuberate markings, the last one continuing as a streak to the anal flap (these became yellowish a day or two before the larva spun up); the pencils of hairs on the 1st segment and the erect tufts on the 4th, 5th and 11th segments, a rich, deep brown; warts emitting soft white hairs, while those on the 11th and 12th segments have also a few long, black hairs mixed with the shorter white. *Poecilocampa populi*.—On June 29th I found a full-grown larva in a crevice in the trunk of a damson tree a few inches from the ground. Two days later it spun up at the bottom of a chip box under a leaf; the cocoon, both in colour and shape, greatly resembles a fancy chocolate. *Cosmotriche potatoria*, *Drepana falcataria*, *Cilix glaucata*. *Cerura bifida*.—I bred a fine ♀ from a larva I found in 1908 on poplar at Tintern; the first specimen we have obtained in the Wye Valley, although we have several times found old and empty cocoons on poplar trunks. *Notodonta dromedarius*. *Petasia cassinea*.—At light, Tintern. *Diloba caeruleocephala*, *Gonophora derasa*, *Thyatira batis*, *Cynatophora diluta*, *Asphalia flavicornis*. *Acronycta leporina*.—I found two larvæ; both, unfortunately, were "stung." *Triaena psi*. *Craniophora ligustri*.—I bred one from a larva found in 1908, but no amount of searching will produce another, although there are plenty of ash-trees and privet bushes to hunt on. *Phaetrea runicis*. *Agrotis puta*.—One at treacle; the first I have seen since leaving the London district. *A. exclamationis*. *Lycophotia strigula* was fairly common at dusk during July, flying over heath. *Triphaena ianthina*, *T. orbona*, *T. pronuba*, *Noctua glareosa*, *N. triangulum*, *N. brunnea*. *N. festiva*.—The males were to be obtained in plenty on the heathy ground, but, as usual, no females. I wonder if other collectors find a difficulty in procuring the females of this moth! Feeling curious as to their seemingly secretive habits, I shall be much obliged if somebody will give me some hints how, when and where to obtain the females otherwise than by breeding them from larvæ found in the spring. *N. baja*, *N. rubi*, *N. umbrosa*. *N. xanthographa* was most variable; one form to be taken here is rather undersized, a very dark chestnut-brown, so dark that the lines of black spots are only faintly visible, the orbicular spot totally obscured, and the reniform nearly so, the latter represented by a faint reddish spot. *Charaxes graminis* was obtained by us for the first time in the Wye Valley, my father taking several ♂s at light at Tintern, and I one ♂ at light and a ♀ netted at dusk. *Neuronis popularis*, *Luperina cespitis*, *L. testacea*, *Aplecta nebulosa*, *Hadena contigua*, *H. genistae*, *H. dentina*, *H. protea*, *Mamestra brassicae*, *M. persicariae*. *Hecatera serena* (?).—At the end of August



two larvæ, I think of this species, were accidentally "swept," and after a lengthy search I found another feeding on the blossom of a species of *Crepis*. *Polia chi*, *P. flavicincta*. *Cleoceris viminalis*.—A ♀ was attracted into the house by light on August 8th; the first time I have taken this species in the imaginal state. *Cerigo matura*, *Xylophasia lithoxylea*, *X. monoglypha*, *X. rurea* and *ab. combusta*, *X. hepatica*, *Apamea basilinea*, *A. gemina*, *A. didyma*, *Miana strigilis*, *Euplexia lucipara*, *Phlogophora meticulosa*, *Hydroecia micacea*, *H. nictitans*, *Leucania impura*, *L. comma*, *L. conigera*, *L. lithargyria*, *Taeniocampa gothica*, *T. stabilis*, *Amphipyra pyramidea*, *A. tragopogonis*, *Caradrina cubicularis*. *C. alsines*.—I netted a number of these in July, flying over the heath at dusk, but only ♀s. *Calymnia trapezina*. *Tethea subtusa*.—I took one at light at Tintern. *Mellinia circellaris*, *Anchocelis pistacina*, *Tiliacea citrigo*, *Citria flavago*, *Orrhodia vacciniæ*, *Xylocampa lithoriza*, *Plusia chrysitis*, *P. iota*, *P. pulchrina*, *P. gamma*, *Habrostola triplasia*, *Helica tenebrata*, *Bryophila muralis*. *B. perla* was rather commoner than usual. I noticed a female one evening at dusk, crawling about a stone terrace in my garden, and imagined she was egg-laying, as she frequently curved her abdomen to press the ovipositor against the stones; I marked the spot, and carefully searched for the ova next morning, but failed to find a single one. *Phytometra viridaria* (*aenea*) was common at the end of May, flying about the heath in the sunshine, and I secured a nice series showing considerable variation. *Gonoptera libatrix*, *Euclidia glyphica*, *E. m. Avenia flexula*.—My father met with one at Tintern. *Herminia tarsipennalis*, *H. grisealis*, *Hyphenodes costæstrigalis*, *Bomolocha crassalis*, *Hyperba proboscidalis*. *Brephos parthenias* was common in March and April, but kept well out of reach when I had my net with me. *Urapteryx sambucaria*, *Angerona prunaria*, *Rumia luteolata*, *Macaria notata*. *M. liturata*.—One found at rest on the trunk of a larch-tree in my garden. *Panagra petvaria*, *Ematurga atomaria* was common on the heathy ground, and very variable. *Nurseria pulveraria*, *Eurymene dolabraria*, *Odontopera bidentata*, *Crocallis elingvaria*, *Himera pennaria*, *Selenia bilunaria*, and var. *juliaria*, *Pericallia syringaria*, *Epione advenaria*, *Metrocampa margaritata*, *Amphidasys betularia*, *Phigalia pedia*, *Tephrosia crepuscularia* (*biundularia*), *T. extersaria*, *T. punctularia*. *Boarmia repandata*, and *ab. conversaria*, also smoky-brown specimens. *B. rhomboidaria*, *Hybernina aurantiaria*. *H. defoliaria*.—The first one was attracted by light on November 5th. *H. marginaria*, *H. rupicaprararia*, *Anisopteryx aescularia*. *Abraxas grossulariata*.—One larva only! The first season for over 20 years that I have missed seeing the imago of this usually very common species. *Ligdia adustata*, *Lomaspilis marginata*, *Pseudoterpna pruinata*, *Geometra papilionaria*, *G. vernaria*, *Iodis lactearia*, *Comibaena pustulata*, *Hemithea aestivaria* (*thymiararia*), *Zonosoma porata*, *Z. punctaria*, *Z. annulata*, *Acidalia scutulata*, *A. bisetata*. *A. subsericeata*.—Very common at dusk flying over the heath in June. *A. remutata*, *A. aversata*, *Melanippe subtristata*, *M. unangulata*, *M. montanata*, *M. fluctuata*, *Melanthia rubiginata*, *M. ocellata*, *M. albicillata*, *M. procellata*, *Coremia designata*, *C. ferrugata*, *Larentia viridaria*, *L. didymata*, *L. multistrigaria*, *Anticlea nigrofasciaria*. *Asthenia candidata*.—Both broods. *Eupisteria heparata*.—One as late as August 5th. *Minoa murinata*. *Emmelesia affinitata* is one of the commonest moths at Tintern and Llandogo, so it is rather remarkable that I did not see a single specimen on this

side of the river. *E. alchemillata* is less uncommon here than on the Monmouthshire side. *E. albulata*, *E. decolorata*. *E. blandiata*.—Already recorded (*Ent. Rec.*, xxi., p. 216). I obtained one or two of the larvæ at the end of September by bending the foodplant with my right hand and shaking it over the palm of my left. *Cidaria miata*, *C. coryllata*. *C. picata* was not uncommon at rest on the trunks of trees. It has a protective habit of sitting sideways so that the narrow patch of whitish ground colour between the dark basal area and the outer marginal border resembles a streak of the chalky excrement of a bird on the tree-trunk. *C. russata*, *C. suffumata*, *C. silacea*, *C. fulvata*, *C. testata*, *Scotosia dubitata*, *Camptogramma bilineata*, *Thera variata*, *Hypsipetes impluviata*, *H. sordidata*, *Oporabia dilutata*, *Cheimatobia brumata*, *C. boreata*, *Lobophora lobulata*, *Chesias spartiata*, *C. obliquaria*. *Anaitis plagiata* is common at rest on rocks and stone walls and also at dusk; the first brood is the most abundant. At Tintern and Llandogo, where it is less common, we have, until last season, only observed specimens of the second brood. *Eubolia palumbaria*, *E. limitata*, *Eupithecia pulchellata*, *E. subfulvata*, *E. lariciata*, *E. albipunctata*, *E. satyrata*, *E. plumbeolata*, *E. vulgata*. *E. expallidata*.—These vary greatly in expanse; the largest I captured measures 1.16 in. from tip to tip, while the smallest is only .95 in. *E. absynthiata*, *E. tenuiata*, *E. abbreviata*, *E. exigua*, *E. debiliata*, *E. coronata*, *E. rectangulata*, and *E. pumilata*. On the last day of the year, which was warm and sunny, I had the pleasure of watching a specimen of *Vanessa io* flying about in my garden.

### Egg-laying of *Vanessa urticae*, L., and result of temperature-experiment on a freshly-laid batch of eggs.

By T. REUSS.

August 10th, 1909, was fine and sunny, the temperature in the shade rising in Hertfordshire as high as 77°F., after falling as low as 49°F. at night. Towards noon, I was cutting down nettles in a meadow, intending to satisfy the wants of a few thousand *Vanessid* larvæ which I was rearing, when a large specimen of *Vanessa urticae* appeared, and, after circling round a moment, dropped on a leaf of nettle close in front of me. Hoping that it would prove to be an egg-laying female, I kept motionless and watched it expectantly. Presently, it spread its wings, then flew up, but settled again not far away. After two minutes, it was flying round again, and now began to flutter and hover over the nettles as if searching for something. I could see by this time, that the specimen was a fine dark female, with much red in the ground colour of the wings. It settled repeatedly, crawled over the nettle leaves, touching and evidently testing them with its antennæ, and then commenced to hang on to, and sidle along, the margins of the leaves, holding the abdomen and hindmost pair of legs underneath the leaf, and assisting its progress by fluttering its wings. After a very few minutes it had evidently found a suitable leaf on the sunny margin of the nettle-bed, and, with half-opened wings, became quiescent in the position just described, suitable for depositing the ova on the underside and near the margin of one of the larger leaves, where this species always seems to place them.\*

\* The young larvæ, on emerging, first perforate the leaf in the vicinity of



Doubting no longer that the eggs would be duly laid, I noted the time, 11.40 a.m., and ran to get my net in order to capture the specimen when it had finished laying. After about five minutes I returned, and found the butterfly still in the same position as before. Then I stood ready with my net—but half-an-hour went by, it was past twelve o'clock, and the insect had not stirred from its position. Ten minutes later things were the same. Then, suddenly, just as I was noting the time once more, I felt something flap against my cheek and looked up, only to find the nettle-leaf empty and to see the butterfly, which had first darted straight into my face, rapidly disappearing on the other side of the high barbed wire fencing and quite out of reach. I did not mourn my lost capture long, however, but immediately examined the nettle leaf, on which it had rested. I found to my delight a fine batch of green ova, the laying of which evidently occupied 43 minutes—from 11.40 a.m. to 12.23 p.m. under the existing weather conditions.† Left out among the nettles, the ova would have been subjected to natural temperature-variation ranging from 7°C.-10°C. at night, to 30°C.-38°C. during the hottest hours of the day (the temperatures were measured by me under the nettle leaves), but I took the ova home and subjected them to a temperature of 30°C.-37°C. night and day, with the result that they emerged on the 14th between 4 and 5 a.m. (after three days and 16-17 hours). The larvæ and pupæ were also kept in temperatures not below 23°C., but most of the former succumbed to "flacherie," and I only reared five imagines, which, however, as I had hoped, reminded me of the Corsican var. *ichnusa*.

### How ants greet members of the same colony.

By W. CECIL CRAWLEY, F.E.S.

[FOREWORD.—The following paper is the first of a series of papers and notes by my friend Mr. Cecil Crawley, which we hope to publish from time to time on the habits of ants and their guests. Mr. Crawley has been working at ants for over fifteen years quite independently, and has amassed a number of valuable facts and observations, many of them entirely new and others very valuable, as they help to confirm some of the modern views on the subject. We therefore think ourselves fortunate in persuading him to put them into print.—HORACE DONISTHORPE.]

When two ants from the same colony meet, they usually cross

the cluster of empty eggshells. They do not stop long for this, however, but wander (in the wild state!) almost immediately up higher and into the nettle-top, where they spin up and create the impression of having hatched there. But the young *urticæ* larvæ do not "hatch in the nettle-buds"; the empty shells, from which they emerged, are never to be found there, but nearly always on the under-side of one of the larger leaves lower down on one of the nettle-plants. I was surprised to find that last season, from May 23rd to the end of September, I could continuously collect fully-grown and newly-hatched larvæ of this species seemingly without any break whatever.

† The days from August 5th-18th, were among the warmest on record since early September, 1906. The shade maxima here were always above 70°F., and, on five days, the thermometer stood over 80°F., and twice reached nearly 90° (31°C. in the shade on the 13th). At night, the thermometer fell to 47.5°F. on the 5th and 18th (on the 4th it had been down to 42°F.). The warmest night was that of the 17th with 59°F.

antennæ before moving on. If the ants be of some species of *Myrmica*, they merely touch each other with their antennæ, and then separate, the mere touch being sufficient to satisfy both that they are friends. If the species be *Formica rufa*, *fusca*, or *sanguinea*, the greeting is often prolonged, the antennæ playing rapidly on each other; and often, especially in hot weather, one of the ants will be seen to make a rapid jerk of the whole body towards the other. This rapid motion of the body does not consist (as is sometimes stated) in striking the head against the other ant. I have watched innumerable cases with great care, and the only parts of the body touching at the time are usually the antennæ. With *Formica*, too, ants will often paw each other rapidly with the forelegs.

One seldom sees two specimens of *Formica* make more than one or two of these curious jerky motions when meeting each other, but when specimens of any species of *Lasius* meet, a succession of rapid jerks is kept up for several seconds. Indeed, on uncovering an artificial nest of *L. flavus* or *niger* and exposing it to the light, almost every ant may be seen thus jerking its whole body to its neighbours. It is a very distinctive characteristic of *Lasius*. An ant may be watched in its progress through an artificial nest, and seen to thus salute almost every ant it meets. In case of alarm, ants rush about the nest in a state of great excitement, infecting every ant they meet with alarm, until the whole nest is roused.

When a nest is full of young winged ♀s and ♂s, the workers may be seen greeting them in this way, and the young ♀s sometimes respond, the ♂s never. When a young fertile ♀ has succeeded in rearing a few workers, she often responds to their salutes, but an old queen in a large nest never does. *Lasius fuliginosus*, a somewhat sluggish ant, does not make so much use of this jerky salute as do *niger*, *flavus*, and *umbratus*. It does not exist among the *Myrmicidae*, hardly at all with *Camponotus*, and not at all with *Tapinoma*.

*Lasius* seems to be able to express alarm, or to communicate the news of a desirable find of food, etc., more by means of this salute than by the play of the antennæ. I have considered it worth while to give a somewhat detailed account of this phenomenon, as I have never seen it described in any work on the subject.

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### Contribution to a list of the Macro-lepidoptera of Bucks.

By KENNETH RAYNOR, B.A.

Dr. Carlier's contribution to your columns of a list of species taken by himself near High Wycombe tempts me to supplement his account by recording the few I have come across during the last three seasons at Tingewick, in the same county. The soil here is principally gravelly loam and clay, the subsoil being various. Tingewick is in the northern division of the county, on the borders of Oxfordshire, and bounded on the north by the river Ouse, about three miles from Buckingham. The greater portion of the land is pasture, and there are three woods, of which the Round Wood is about a quarter of a mile square, Lenborough Wood is half a mile long and a quarter broad, whilst Tingewick Wood is three-quarters of a mile long and half a mile broad. The land by the Ouse is naturally swampy. I have not been here continuously enough to do any very regular collecting, but as so little has



been published of late years concerning the insects of the county, I feel that the following list may possibly be of some interest and value:—

DIURNI—*Gonepteryx rhamni*, *Pieris brassicae*, *P. rapae*, *P. napi*, *Leptosis sinapis*, *Euchloë cardamines*, *Epinephela janira*, *Enodia hyperanthus*, *Hesperia malvae*, *Nisoniades tages*, *Adopaea flava*, *Augiades sylvanus*, *Coenonympha pamphilus*, *Pyrameis atalanta*.

SPHINGIDES—*Eumorpha elpenor*, *Sesia stellatarum*.

HEPIALIDES—*Hepialus lupulinus*.

ARCTIIDES—*Nudaria senex*, *N. mundana*, *Arctia caia*, *Spilosoma menthastris*.

ANTHROCERIDES—*Anthrocera filipendulae*, *A. lonicerae*.

LACHNEIDES—*Ectricha quercifolia*.

CYMATOPHORIDES—*Thyatira derasa*, *Asphalia diluta*.

NOCTUIDES—*Tapinostola fulva*, *Gortyna ochracea*, *Bryophila perla*, *Heliothobus popularis*, *Miana strigilis*, *Apamea oclea*, *Agrotis segetum*, *A. exclamationis*, *Peridroma suffusa*, *Graphiphora augur*, *Noctua c-nigrum*, *N. plecta*, *N. umbrosa*, *Triphaena interjecta*, *Mamestra brassicae*, *Xylophasia lithoxylla*, *X. sublustris*, *X. monoglypha*, *Caradrina quadripunctata*, *Mellinia gilvago*, *M. circellaris*, *Anchocelis pistacina*, *Orthosia lota*, *Aplecta advena*, *Polia flavocincta*, *P. chi*, *Taeniocampa gothica*, *Hadena oleracea*, *Scopelosoma satellitia*, *Xylocampa areola*, *Orrhodia ligula*, *Miselia oxyacanthae*, *Habrostola tripartita*, *Plusia gamma*, *P. chrysis*, *P. iota*, *P. moneta*.

GEOMETRIDES—*Urapteryx sambucata*, *Angerona prunaria*, *Rumia cratargata*, *Selenia bilunaria*, *Boarmia repandata*, *Epione apiciaria*, *Abraaxas grossulariata*, *Corycia temerata*, *Panagra petraria*, *Asthena luteata*, *Hemithea strigata*, *Hybernia marginaria*, *Acidalia dimidiata*, *Emmelesia decolorata*, *Eupithecia vulgata*, *Melanippe sociata*, *M. fluctuata*, *M. bicolorata*, *Oporabia dilutata*, *Anticlea nigrofasciaria*, *A. badiata*, *Triphosa dubitata*, *Larentia didymata*, *Cidaria immanata*, *C. truncata*, *C. associata*, *C. fulvata*, *C. prunata*, *C. miata*, *Tanagra atrata*.

The list is at present very tentative, but is, I think, sufficiently good to justify the inference that this is an excellent locality for collecting. If any species are worthy of special note they are *Leptosis sinapis*, *Plusia moneta*, and *Polia chi*, of which the last is probably quite new to this part of England.

## NOTES ON COLLECTING, Etc.

LIMENITIS SIBYLLA IN HEREFORDSHIRE.—I have been asked to record the occurrence of this butterfly in Herefordshire, as it appears to be a new county record. I saw a single example on the wing on August 29th last, close to Kilpeck Church, about a mile from St. Devereux Station, on the Great Western Railway. As the district is well wooded, no doubt the *L. sibylla* was near its native haunts, but I had no chance of following the matter up, as I was only paying a hurried visit to the old Saxon church, and had a train to catch.—J. R. LE B. TOMLIN, M.A., F.E.S., "Stoneley," Reading. January 14th, 1910.

ABUNDANCE OF WINTER MOTHS AT WIMBLEDON.—The evening of January 2nd being more like early June than early January, I went for a stroll through the wooded portion of the Common. I found *Hybernia defoliaria* and *Cheimatobia brumata* in almost incredible

numbers, the former hanging in thousands on every tree and bush, and some on blades of grass, etc., apparently just emerged, while every oak-trunk was literally covered with *C. brumata*, which flew off in clouds as soon as the light fell on them. Many of these were also freshly emerged with still undeveloped wings. There would appear to be a poor lookout for the foliage on the Common next summer judging by the number of females of both species crawling about the trees and bushes. On the way home I observed several *Phigalia pedaria* (*pilosaria*) on the lamps, and one which I examined had evidently been out some little time, as the fringes were very worn. By the way, I see the list of Geometrids noted on the Common by Mr. Smallman (*Ent. Record*, xx., pp. 60-61) does not include *Cheimatobia boreata*, which is exceedingly common among the birch bushes here.—(CAPT.) P. A. CARDEW, 50, Melbury Gardens, Cottenham Park, Wimbledon. *January 8th*, 1910.

## CURRENT NOTES.

The Entomological Society of London held its Annual Meeting on January 19th, when Dr. F. A. Dixey read an excellent Presidential Address, the special portion of which related to the Androconia of the Pierine butterflies. The President after congratulating the Society on its continued prosperity, and paying a tribute to the memory of distinguished entomologists who had died during the past year, referred to the appointment by the Colonial Office of a Committee for Entomological Research, which, he hoped, might be taken as evidence of increased recognition by public authorities of the value of scientific advice and co-operation. The recent Darwin commemoration at Cambridge and the approaching International Congress of Entomology at Brussels were then noticed.

Much has already been published on the subject of "Androconia" or "male plumules," as they are sometimes called, especially with regard to those of the Lycænids, but Dr. Dixey opened new ground in bringing forward details of those of a considerable number of species, and entering into a comparison of the broad features of those of different generic groups. Dr. Dixey, in the wider outlook that he has taken, necessarily lays himself open to criticism of details, but his final statement is really an appeal for such criticism, and one can heartily congratulate him on a very excellent address containing much that is evidently "both new and true."

On the critical side one feels at once that one would like to know many more details than could possibly be given in the address, of the androconia of many groups. We are particularly interested in the group that Dr. Dixey calls *Euchloë* (pp. 20-21). Here we have such species as (1) *scolymus*, *sara*, *euphenoides* (in which there are said to be no androconia); (2) *genutia*, *pima*, *belia* (in which they are scanty); (3) *cardamines*, *ausonia* (in fair numbers); (4) *creusa*, *belledice* (? = *bellezina*), *belemia* (in which they are abundant), all united under the name *Euchloë*. Based on the characters of the early stages, as well as on the neururation, these species are not at all so closely allied as the putting of them into one genus would suggest, and they consist of representatives of at least two fairly widely separate genera—*EUCHLOË*—*cardamines*, *gruneri*, *danone*, *eupheno*, *euphenoides*, *sara*, ? *genutia*. *ANTHOCHARIS*—



*belia*, and its summer-brood form *ausonia*, *belemia*, *falloui*, *tagis*, *bellezina*, *charltonia*, *ausonides*, *olympia*, etc. (see *Can. Ent.*, 1894, pp. 47, 100, 166). This latter group is much more closely allied to *Pontia* and *Pieris* than is the former. That this is so, is readily seen later on in the address (pp. 47-49), when the President comes to consider the androconia of our common Pierids (1) *Pieris* (*Ganoris*) *brassicae*, *rapae*, *napi*, and (2) *Pontia* (*Synchlœ*) *daphidice*, *chloridice*. With the latter he finds himself in some little trouble, and his statement that the androconia of "the genus *Synchlœ* show a strong resemblance to those of many forms of *Euchlœ*, e.g., the laminae in *S. chloridice* being strikingly like those of *E. creusa*, exhibiting a similar expansion towards the blunted discal margin, whilst the discs in both genera are small and circular or oval," supports our position. He further notes that *Synchlœ hellica* and *S. johnstonii* have plume-scales "of the like character, while those of *S. glauconome* differ chiefly in the sharpness of their apex. The laminae in *S. daphidice* vary considerably in breadth; they bear much resemblance to those of *Euchlœ ausonia* and *E. belemia*, having like them a somewhat short apex. In both genera, *Euchlœ* and *Synchlœ*, the laminae are characterised by a well-marked longitudinal ribbing, which is in obvious relation with the fimbriae."

This is exactly as it should be. Everything points, in the biology of the insects, to a clear separation of *Euchlœ* (*sens. rest.*)—*cardamines*, *euphenoides*, etc., from the other group generically; whilst *Anthocharis*, containing that part of Dr. Dixey's *Euchlœ* comprising *belia* (and its summer form *ausonia*), *belemia*, etc., is biologically closely allied to *Pontia* (Dr. Dixey's *Synchlœ*)—*daphidice* (its spring form *bellidice*), *glauconome*, *chloridice*, etc.—and that these fall quite near together, Dr. Dixey's facts (*suprà*) confirm. Indeed, these criticisms merely show the accuracy of Dr. Dixey's facts, which only want a little rearrangement and reshuffling to make them fit the biological data considered to be of taxonomic value in this little group.

The figures by means of which the address was illustrated, formed another excellent feature, and permitted everyone (including specialists in other orders) to follow the details throughout, whilst the President's book of careful drawings of these structures—a work spread over several years—indicated the desirability of fully illustrating the address; no doubt this will be arranged between the President and the Council of the Society. Indeed, Dr. Chapman and Mr. Tutt both voiced this necessity at the meeting.

The vote of thanks to the Officers, proposed by Mr. W. E. Sharp and seconded by Mr. H. C. Druce, was well-deserved. Commander Walker's work as editor of the *Transactions*, is no sinecure, and the fact that during the last 25 years the fellowship has doubled indicates the accumulation of work thrown upon Mr. H. Rowland-Brown, the General Secretary, and Mr. A. H. Jones, the Treasurer. The library, too, Mr. G. C. Champion's concern, is continually growing, and requires continuous attention. But it is for their attempt to overtake accumulated arrears that thanks this year are mainly due, and the fact that Part iv. of the *Transactions* was ready before the new year, and delayed in forwarding merely by the printers, changed what should have been a matter for congratulation into a feeling of great annoyance. It was fully intended that Parts iii., iv., and v. of 1908, and Parts i., ii., iii., and iv. of 1909, should have been published and paid for within the

current financial year, and thus all arrears of publication and payment met before the new financial year began. Better luck, perhaps, next time. It, perhaps, is not generally known by lepidopterists in the provinces that books can be forwarded to Fellows: one is somewhat astonished at the large number of evidently good lepidopterists who have not yet become Fellows; we should be glad to hear from any of our subscribers who can spare a guinea a year in support of the society, and would like to join.

The North London Natural History Society has removed its home to the City (Salisbury House, Finsbury Circus, E.C.). The officers and council for the year are:—President: L. B. Prout, F.E.S. Vice-Presidents: C. S. Nicholson, F.L.S. and L. J. Tremayne. Treasurer: C. B. Smith. Librarian: A. B. Hornblower. Curators: J. E. Gardner, J. O. Brathwaite. Secretaries: R. W. Robbins, S. W. Bradley. Council: Stanley Austin, A. Bacot, F.E.S., Mrs. R. W. Robbins, and Mrs. C. B. Smith.

At the Annual Meeting of the Lancashire and Cheshire Entomological Society, held on December 20th, 1909, an address was delivered by Dr. H. H. Corbett, the retiring Vice-President, who took for his subject—"The evolution of the natural order Insecta." The lecturer, by means of lantern slides and diagrams, described how possibly the great family of insects had arisen. Beginning with the simplest animal organisms, and proceeding to others more and more complex, Dr. Corbett constructed a tree showing the probable genealogy of moths, butterflies, and beetles. The address was greatly appreciated by those present, and, at the close, a vote of thanks was proposed by Mr. R. Newstead, which was carried with acclamation.

The following gentlemen were elected officers and council of the Lancashire and Cheshire Entomological Society for the current year, *viz.*:—President: S. J. Capper, F.E.S. Vice-Presidents: E. R. Banks, M.A., F.E.S., Robert Newstead, M.Sc., F.E.S., W. J. Lucas, B.A., F.E.S., C. E. Stott, Claude Morley, F.E.S., P. F. Tinne, M.A., M.B. Hon. Treasurer: J. Cotton, M.R.C.S. Hon. Secretaries: H. R. Sweeting, M.A., William Mansbridge, F.E.S. Hon. Librarian: F. N. Pierce, F.E.S. Council: E. G. Bayford, F.E.S., W. D. Harrison, W. A. Tyerman, E. J. B. Sopp, F.R.Met.S., William Webster, M.R.S.A.I., George Arnold, F.E.S., William Mallinson, W. T. Mellows, L. H. Lister, G. M. Taylor, M.A., J. H. Leyland.

There has recently been a discussion in the *Times* re the transfer of the "Walsingham collection" of micro-lepidoptera to the Natural History Museum, South Kensington, in which Sir E. Ray Lankester animadverts on the action of the Trustees of the British Museum in accepting "the original deed of gift drawn up by Lord Walsingham . . . without consulting" him (Sir E. Ray Lankester), although they have been advised by Sir E. Maunde Thompson to accept it, Sir E. Ray Lankester objecting on the ground that "the expenditure demanded by Lord Walsingham on the part of the Trustees (in providing a curator, attendant, special rooms, etc.), represented a sum the annual value of which exceeded the market value of the collection."

But the point of the value of the collection to those who can make scientific use of it lies just in this condition, and every lepidopterist who knows the ways of the Museum will recognise that Lord Walsingham's conditions are really as important to science as the gift



of the collection, in fact without the conditions the collection would be lost there, as have so many others, and as Sir E. Ray Lankester must know full well. Indeed, the illogical position taken up, that students are not to be allowed to study an already excellently prepared collection of one group, to which hundreds (nay thousands) of specimens will be added annually (if it be under the care of an expert assistant), because, in the Museum, there are over "one million specimens of insects (of other groups)—representing about 900000 species, of which about one quarter (240000) were, in 1904, unidentified, *i.e.*, unstudied," is amazing, and it does not seem to have occurred to the late Director that the possibility of making this acquired unknown material ready for use, suggests one of two things, either (1) that the present staff is sufficient, and its work is being largely wasted in rearranging Orders or Groups already comparatively well-known, and which might be left alone except for placing additions where they fall, the rest of the time being spent on the unknown material, or (2) that the present staff is hopelessly insufficient for the work, and wants increasing to make the material in hand effective, both of which points should have come under his purview as Director.

To talk about Mr. August Busck, the well-known American microlepidopterist, as "A writer in Washington, U.S.A.," and his letter as "foolish and ill-mannered abuse" is, one supposes, excellent form. To call the governing body "a body of ill-informed Trustees, acting in opposition to the advice of expert officials who have the grave duty of administering a complex organisation by an annual vote of public money" is no doubt the acme of good manners. We wonder if it would surprise Sir E. Ray Lankester to learn that entomologists prefer Mr. Busck's view of the matter to his own, and that the one thing from which naturalists *per se* pray to be saved, is the handing over of the management of these scientific collections to "professional" scientists. Professor Adam Sedgwick's letter (published December 28th) and Sir E. Ray Lankester's diatribes are too transparently simple to deceive anyone. The "Walsingham collection" is only a detail in a much larger matter; men like Sir Archibald Geikie are not to be deceived by such simple devices any more than was the late Professor Huxley. Mr. Carruthers says, "as Keeper of Botany for 24 years, I cannot recall a single occasion in which my department suffered from the action of the Trustees; I always found them intelligent and sympathetic in the affairs of the department." It would no doubt be a fine thing to hand over the management of the Natural History Museum entirely to paid officials—for the officials; entomologists, at any rate, recognise that they are much better off under the present conditions.

It may be well to add that Mr. A. Busck estimates the value of the Walsingham collection—consisting, as it does, of a minimum of 300000 carefully mounted, labelled, and determined specimens, including thousands of types of new species from all parts of the globe—at 250000 dollars, *i.e.*, £50000, and that Dr. Dyar and Mr. W. Schaus agree that this is a fair estimate, and we quite agree with him that "several American museums would jump at the chance to obtain these priceless collections, which Professor Lankester advises the British Museum against accepting as a gift, subject to the condition of their proper maintenance by a separate expert assistant."

Messrs. Dukinfield Jones and W. J. Kaye have gone to Brazil for the purpose of collecting lepidoptera. They left on January 27th, for Rio de Janeiro, and propose collecting in the Organ Mountains, travelling southwards as far as Castro, in Parana, so long the home of Mr. Jones, and whence he has already brought a marvellous collection of Heterocera, now housed at Reigate.

We have to congratulate Mr. G. H. Verrall, F.E.S., on the consummation of his desire to become M.P. for the Newmarket division of Cambridgeshire. Our long since Ex-President of the Entomological Society has twice before unsuccessfully contested the constituency against Sir Charles Rose. This time, with a turnover of nearly 1000 votes, he won. On account of the election, the Entomological Club supper, given annually by Mr. Verrall, a function usually held in January, on the evening before the Annual Meeting of the Entomological Society of London, was held this year on February 1st.

The members of the club and guests numbered altogether about 80, including the Hon. Walter Rothschild, Professor Meldola, Colonel Yerbury, Commander J. J. Walker, Revs. E. C. Bloomfield, F. D. Morice, C. F. Thornehill, G. Wheeler, Drs. M. Burr, T. A. Chapman, F. Dixey, K. Jordan, Messrs. R. Adkin, Andrews, Austen, Barraud, Bethune-Baker, Bliss, Bouskell, F. B. Carr, Cant, J. H. Carpenter, Champion, F. Noad Clark, Collin, Distant, Hereward Dollman, Donisthorpe, Hamilton-Druce, S. Edwards, Willoughby Ellis, Enock, Fenn, Gahan, Gibbs, T. W. Hall, A. Harrison, P. Harwood, S. Image, Jackson, Janson, Jennings, A. H. Jones, W. F. Kirby, Lewis, Lister, Lucas, Meade-Waldo, H. Main, Guy Marshall, A. H. Martineau, F. Merrifield, Morley, W. Nicholson, H. E. Page, F. N. Pierce, G. T. Porritt, Rowland-Brown, Sauzé, Scollick, W. E. Sharp, Sheldon, Sich, Skinner, E. A. Smith, South, Step, Tomlin, Tonge, H. J. Turner, J. H. Tutt, J. W. Tutt, Wainwright, E. A. Waterhouse, etc. An excellent supper was served at 8.30 p.m. in the Gordon Room, after which the host, in an excellent speech, proposed "The Entomological Club," and after heartily welcoming his guests, briefly referred to the contest from which he had successfully emerged, noting that in olden times the politics of Egypt had been upset by a plague of flies, but that now the study of flies had been interrupted by politics: he congratulated his guests on the fact that they had a republic of their own, the only passport to which was a love of entomology, and from which outside politics were rigorously excluded. Referring to enforced absentees, he particularly regretted the accident that had prevented Professor Poulton from attending. He had a regretful feeling that for a time at least he would possibly be prevented from taking so active a part in entomological matters as heretofore, but felt that the cessation would only bring him back more enthusiastic than ever. He thanked his many friends for their "personal congratulations," and commented on the good feeling that had prevailed in his own and other constituencies, and, referring to the Entomological Club as the oldest entomological and scientific body of its kind, hoped that it would for many years be the vehicle of forming and cementing personal friendships among entomologists.

Dr. Dixey, President of the Entomological Society of London, in proposing the health of the host, said he had no doubt the late government fixed the date of the dissolution in order to allow



them to congratulate Mr. Verrall on his election as a member. He stated that there could be no doubt that the party to which Mr. Verrall belonged was that with "two wings," he could not belong to the other which had more, but he could be claimed as Conservative, for he upheld the best traditions of the race; he could also be claimed as Liberal, his liberality in the matter of the invitations he annually sent out to the guests of the Entomological Club, spoke for itself; his volumes on the Diptera proved conclusively that he could be claimed as a Labour member. The health of the host was then drunk with musical honours, to which Mr. Verrall briefly replied. The rest of the time was filled by personal gossip among the guests, who began to disperse about 11 p.m., those staying in the town for the night, however, remaining some time longer.

Another *Conversazione* will be held in May next by the Entomological Society of London. Fellows who are willing to assist in any way by exhibiting, etc., are kindly requested to communicate with Mr. H. Rowland-Brown or Commander J. J. Walker, the Honorary Secretaries, at 11, Chandos Street, Cavendish Square, W.

We should be very glad of any information with regard to the range of the ♂ form of *Polyommatus icarus*, in which the red lunules are noticeable on the upperside of the hindwings (ab. *rufolunulata*); also of information relating to the underside aberrations *addenda*, *costajuncta*, and *basijuncta* of the same species, parallel with those of *A. thetis* and *A. coridon* bearing the same names.

We have just received from Mr. Culot (Villa-les-Iris, Genève) Part ii. of his *Noctuelles et Géomètres d'Europe*, with eight pages of letterpress and two plates of the Noctuids, quite equal to those issued with Part i. They are indeed quite masterpieces of hand-coloured work.

It is with the greatest regret that we hear that Professor E. B. Poulton has met with an accident, breaking his arm in Switzerland.

## SOCIETIES.

CITY OF LONDON ENTOMOLOGICAL SOCIETY.—*January 4th, 1910.*—POCKET BOX EXHIBITION.—Exhibits: SERIES OF HYDRECEIA NICTITANS, L.; PALUDIS, Tutt; LUCENS, Fré.; and CRINANENSIS, Burrows; with microscopic mounts and photographs of the genitalia of both sexes of each species, to show the specific distinction, the Rev. C. R. N. Burrows. AGRIADES CORIDON AB. ♀ SYNGRAPHA AND A. THETIS (=BELLARGUS) VAR. ♀ CELESTIS, Ob., both from West France, Dr. T. A. Chapman. NONAGRIA EDELSTENI, Tutt, from Sussex, with the new aberrations *rufescens*, Edelsten, and *fusca*, Edelsten, with the ova and pupa *in situ*, and photographs of the early stages, by Mr. Main, to illustrate the life-history of the species, Mr. H. M. Edelsten. AGRIADES CORIDON, males and females from the South Downs, August, 1909, the males showing shades from steel-grey to bright blue, and some females of ab. *semi-syngrapha*, Mr. A. F. Hemming. CATOCALA FRAXINI, bred from eggs obtained from female taken at Horsham, September 9th, 1908 [It would be interesting to get further particulars of these ova; information has come to us that leads us to ask for details of their British origin.—Ed.] Mr. G. H. Leach. ARCTIA VILICA, PHRAGMATOBIA FULIGINOSA, DIAPHORA MENDICA, SPILOSOMA LUBRICIPEDA and VAR. RADIATA, and S. MENTHASTRI, with its buff aberrations, Mr. A. W. Mera. VENUSIA

CAMBRICA, with its two melanic forms, ab. BRADYI, bred from Sheffield district with both wings melanic, and ab. LOFTHOUSEI from the Middlesex district, with only the forewings melanic, yet still streaked longitudinally with white, Mr. L. B. Prout. ABRAXAS GROSSULARIATA, aberrations bred from larvæ taken wild in North London, upon *Euonymus*. One other specimen suffused and spotted with black, taken by Mr. Southey at Barnsbury, in 1884, Mr. J. Riches. LEPIDOPTERA FROM RANNOCH, including a remarkable aberration of *Aplecta prasina* (*herbida*) with centre of forewings very pale, and *Boarmia repandata* var. *conversaria*, Reigate and Potter's Bar, Mr. L. Sabine. SMERINTHUS hybr. HYBRIDUS, three specimens bred October, 1909. AMORPHA POPULI, a gynandromorph, left side ♂, right side ♀, bred June 10th, 1909, and a series of BITHYS QUERCUS, bred from New Forest larvæ, July, 1909, Mr. V. E. Shaw. DEPRESSARIA PUTRIDELLA, Schiff., first taken in Britain by Mr. E. D. Green, who took the larvæ at Whitstable in 1906. An interesting addition to the British fauna, on account of its southern distribution and large amount of variation; also *D. umbellana* and *D. yeatiana* for comparison, Mr. A. Sich. TAPINOSTOLA FULVA, series taken in Richmond Park, September, 1909, Mr. P. W. Tautz. RUMICIA PHLEAS AB. ALBA, taken at Brasted, Kent, August 28th, 1909, and several specimens of CUPIDO MINIMUS, unusually small, little more than half the usual size, taken at Winchester, June, 1909, Mr. H. J. Turner. AGRIADES CORIDON AB. FOWLERI from Swanage, and ab. SUFFUSA from Shanklin, Mr. C. H. Williams. MELITEA CINXIA, groups showing gradation of ground colour and intensity of markings. Some of the specimens were distinct from the groups, and formed striking aberrations. The insects exhibited were picked from specimens bred from wild Isle of Wight larvæ collected over a series of years, Mr. A. J. Willson.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY.—MOUNTING COLEOPTERA: Mr. South, on behalf of Mr. More of Barnet, specimens of Coleoptera, etc., mounted on transparent gelatine cards allowing of ready examination. SELENIA BILUNARIA: Mr. Adkin, a series of *Selenia bilunaria*, bred from Eastbourne ova, and read notes on the brood. PHOTOGRAPHS OF RESTING HYBERNIAS: Mr. Lucas, photographs of *Hybernia defoliaria* taken on January 4th and 8th on Esher Common. HYDRÆCIAS: Mr. Turner, on behalf of Rev. C. R. N. Burrows, series of the genus *Hydroecia*, *H. nictitans*, *H. palustris*, *H. lucens*, and *H. crinanensis*, together with microscopical preparations of the genitalia and photographs of the same. LEPIDOPTERA AND HYMENOPTERA EXHIBITED: Mr. Tonge, a bred series of *Cidaria miata* from Chichester, a bred pair of *Catocala fraxini* from ova laid by a ♀ taken at Horsham, and two species of Hymenoptera bred from a bamboo cane standing in a garden at Red Hill. LIVING PYRAMEIS ATALANTA: Mr. Newman, living specimens of *Pyrameis atalanta*, which he was endeavouring to hibernate. ABERRATION OF POLYOMMATUS ICARUS: Mr. A. H. Hemming, an underside aberration of *Polyommatus icarus* taken at Red Hill, in which the submedian spots were closely clustered around the discoidals; on the hindwings some spots were obsolete. LANTERN DEMONSTRATION: Mr. Enock gave a lantern demonstration of the life-histories of *Gonepteryx rhamni*, *Dicranura vinula*, and *Urapteryx sambucaria*; followed by a series of photographs of the delicate hymenopterous egg-parasites, *Mymaridae*.



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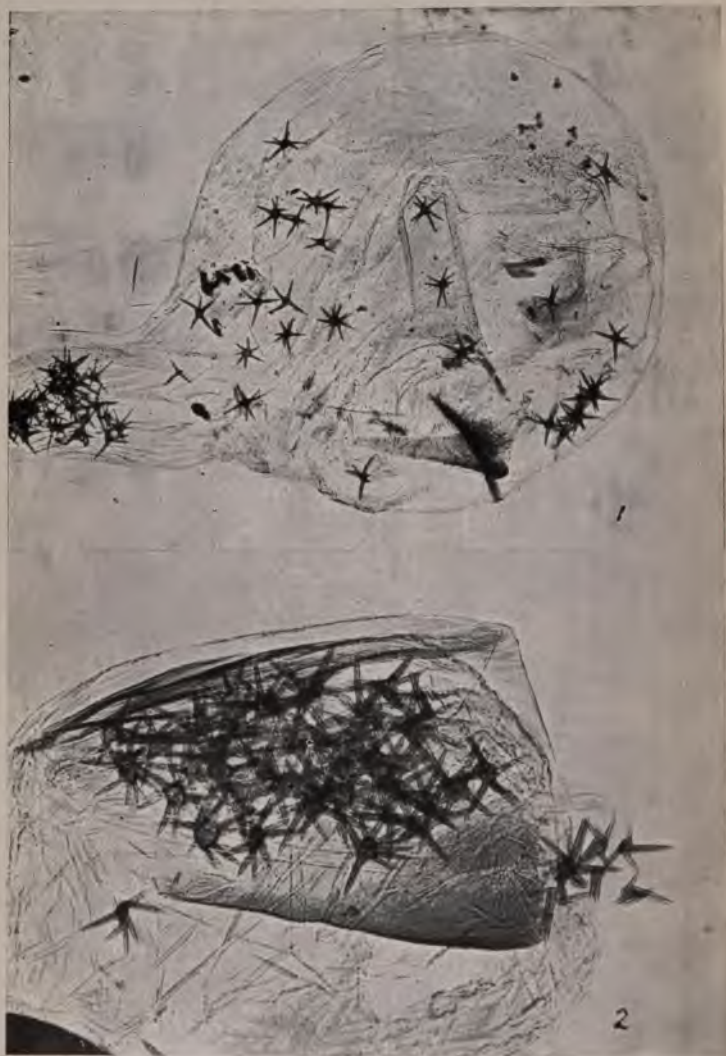


Photo. F. N. Clark.

PERIDEA TREPIDA, STELLATE BODIES OF ANCILLARY APPENDAGES.

FIG. 1.—♀.      FIG. 2.—♂.

*The Entomologist's Record and Journal of Variation, etc., 1910.*

W. B. BARNES



On the conjugation of *Peridea trepida* (with plate).

By T. A. CHAPMAN, M.D.

Students of the male ancillary appendages of lepidoptera are familiar with certain small spines [*cornuti* (misprint for *cornuli*?) of Pierce], very varied in form, size, arrangement and number, that arm the eversible membrane (*vesica* of Pierce) of the *ædæagus*. It is also very generally known that in a few cases these *cornuli* in conjugation, break away from the vesical membrane, and are left behind in the bursa of the female. I have obtained specimens and photographs illustrating this fact in several species, and have hopes of enlarging the series.

However, *ars longa*, and I may not attain to being able to set forth the subject in any definite order; indeed, the cases so far known to me are distributed erratically in various totally unrelated families, and a due co-ordination of these must mean a long and wide research. It seems, therefore, not undesirable to set forth one of the most remarkable of these cases, with a view to interesting a larger number of observers in the subject.

I owe to Mr. Burrows the knowledge that the *ædæagus* of *P. trepida* contained a collection of star-like bodies. An examination of a number of specimens showed that these very curious bodies were swimming quite free in a dilatation of the eversible tube in the *ædæagus* of ♂ specimens of *P. trepida* that had never paired, but that they were absent from those individuals that had paired. Further, that in females that had paired, the bursa contained a swarm of these bodies, which were quite absent in the case of virgin females.

As most specimens of *P. trepida* in collections are bred, it was less easy to obtain specimens that had paired than in the case of many other insects.

There can be no doubt that these little stellate bodies of dark chitin, with their five to eight rays, are identical in all respects with Pierce's *cornuli*, are in fact *cornuli*, yet they are unattached. It would probably be safe to assume that, at a date earlier than the complete maturity of the male moth, these *cornuli* have an attachment as in other cases, but certainty can only be attained by examining moths in different stages of development before they emerge from the pupa.

Probably other species of *Peridea* are similarly provided; these I have had no opportunity of examining, but I have examined a large number of other Notodonts, without meeting, not merely with any similar arrangement, but with anything that could be supposed to be any stage in the evolution of this remarkable arrangement.

The photographs show a portion of the *ædæagus* of *P. trepida* ♂, crowded with these caltrop-like engines  $\times 45$  (pl. iii., fig. 2). The other shows the bursa of the ♀, containing a large number of the same structures; this is only magnified 20 diameters (pl. iii., fig. 1). I do not figure these same organs devoid of these irritating particles, for the simple reason that they practically show nothing; yet it is perhaps necessary to say that I have found several specimens of these also.

These remarkable structures occurring nowhere else amongst the species with which *trepida* has been associated by Kirby, Meyrick, Hampson, Staudinger, etc. (i.e., with *dromedarius*, *dictaea* and other

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species equally distinct generically), suggests this as a proper occasion to point out that *trepida* in most of its stages, especially the larval ones, has nothing to do with the species these authorities have placed with it. It is clear that in providing for it the monotypical genus *Peridea*, well on to a century ago, Stephens (and Stainton more recently), had more real grasp of the matter than our so much valued modern authorities.

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**The British *Hydræcias* of the "nictitans" group—with some remarks on natural modesty and entomological problems awaiting workers in the British fauna.**

By J. W. TUTT, F.E.S.

Some 22 years ago I was greatly interested in these insects, and differentiated the three species *Hydroecia nictitans*, Linn., *H. lucens*, Frr., and *H. paludis*, a species not before described. Of *H. nictitans* and *H. paludis*, a coloured plate of comparative forms was published (*Entom.*, xxi., pl. i) in December, 1888.

In 1891 I further dealt with the variation of these three insects at length (*British Noctuae and their Varieties*, vol. i., pp. 58-64), but few of our British lepidopterists at the time appeared to have a grip of the insects comprising the group, although Mr. W. H. B. Fletcher at once recognised that the species whose larvæ he had found and noted as *H. nictitans* was *H. paludis*, nor did the importance of his statement that he had "bred a considerable number of so-called *H. nictitans* from larvæ found on the south coast near Worthing," and that they "all, without exception, produced *H. paludis*," appear to have the weight attached to it that it deserved. Later I paid further attention to the matter, and notes on examples of *Hydræcias* from Morpeth were published (*Ent. Rec.*, viii., pp. 45-56), whilst, with Mr. Acton, I worked out details of the "moss" forms of Lancashire and their variation, the results being published (*Ent. Rec.*, vii., pp. 78-79), and the specimens exhibited by myself at the meeting of the Entomological Society of London, held on October 2nd, 1895, and at the meeting of the City of London Entomological Society the preceding evening. With the results of the examination of some of these I was less satisfied than with that of any other specimens that came under notice, but have not since given them any attention. Then, in 1899, the Rev. C. R. N. Burrows called attention to the distinctness of *H. paludis* (*Ent. Rec.*, xi., p. 94). But Mr. Burrows' and our own conclusions were set at nought almost at once by Barrett, who wrote the same year (*Brit. Lep.*, v., p. 64): "Variation in this species (*H. nictitans*) is very great; some entomologists profess to be able to separate some of the forms as a distinct species under the name *lucens*, but for this there is not, in my opinion, any ground; all the variations in size, colour, and distinctness of the reniform stigma, interchange and shade imperceptibly into each other," etc. Not a word about *Hydroecia paludis*, the most distinct species of all, not a hint as to the differentiation of the forms, just a jumbling in his further remarks of three (or more) species together, and the final statement that "its variations might be dwelt upon indefinitely." With Barrett's experience, he ought to have felt that he was "lumping," and have remembered what has become almost an entomological proverb—"All



beginners lump (they are not trained to see differences), but everyone ends by splitting (small differences become easily noticed with experience)." Anyway, Barrett evidently studied these *Hydræcias* insufficiently to make anything of them.

In 1902, Dr. A. R. Wallace requested me to write for the new edition of *Island Life* a list of the various forms of the lepidoptera peculiar to our islands. The compilation worked out at so great a length, that I at last eliminated only the most striking cases for Dr. Wallace's book, but published the whole list in the *Ent. Record*, vol. xiv. Here, among other things, I note (pp. 116-117) the *Hydræcias*, and of *H. paludis* I write, "A quite distinct species, but closely allied to *H. nictitans*, chiefly confined to coast districts of the south-east of England," etc. Then Mr. Studd and the Rev. E. C. Dobrée-Fox (*Ent. Rec.*, xvi., p. 107) write on *H. paludis*, and point out its distinctness, and I note (*op. cit.*, xvii., p. 305) on its abundance on the saltmarshes of the Medway in 1905, Mr. Ovenden doing the same (*op. cit.*, xviii., p. 18), whilst the sale of some fine ones at Stevens' in Mr. G. F. Mathew's collection, is chronicled (*op. cit.*, p. 330). Then, in 1907, Mr. South (*Moths British Isles*, i., p. 284), without even mentioning *lucens*, sinks *paludis* as a form of *H. nictitans*, in the following authoritative sentence: "Specimens found in marshes, especially those by the sea, are usually somewhat larger than normal, but I cannot see that they otherwise differ from forms of *H. nictitans*." *H. paludis*, therefore, after all our careful study and attention, and in spite of the fact that it would apparently breed true—at any rate, larvæ obtained in certain districts produced nothing else—was ultimately settled as being undifferentiable from *H. nictitans*. Here was a state of bliss which personally I hoped would last for ever.

But Mr. F. N. Pierce was, whilst Mr. South was publishing this welcome conclusion, microscopically examining and photographing the ♂ ancillary appendages of the Noctuids for his forthcoming book on the subject, and the Rev. C. R. N. Burrows was busy helping with the same work. The latter gentleman, when he came to deal with the *Hydræcias*, started to worry me to name specimens, and it was in vain that I told him that, whatever little I had once known about them was dissipated in the clouds of the past, and that the more recent authorities, who had dropped them, would be able to give all their reasons, because still fresh in mind, for ignoring what had been written in 1888 and 1891. A further plea that I had other work on hand was useless, and I had to name *Hydræcias*, and determine *nictitans*, *lucens*, and *paludis*, at sight, as in the days of my roseate but past youth, and as if these had not been sunk because there were no differences by which they could be separated. Then came the wonderful discovery—the genitalia proved that *Hydroecia nictitans*, *H. lucens*, and *H. paludis*, were distinct species, widely distinct; and I was cynical enough to retort that I knew that 20 years ago; that I had described (*Brit. Noct. and their Varieties*, vol. i., pp. 58-64) six clearly distinct aberrations of *H. nictitans*, four of *H. lucens*, and three (almost racial) of *H. paludis*. I further spitefully added, that no collector who could distinguish *Catocala nupta* (the red underwing) from *Triphaena pronuba* (the yellow underwing), could fail to distinguish *Hydroecia nictitans* and *H. paludis*, even if he came a cropper over *H. lucens*. What I was told about my amazing cleverness by my

reverend friend, had better be left unsaid, but it is necessary to take the entomological public thus far into confidence to lead up to what follows.

Whilst examining the genitalia of these species, Mr. Burrows came across a form that, in its ancillary appendages, could not possibly be either of the three above species. Specimens were submitted to me, and on every occasion, without hesitation, I referred them to *H. lucens*. The appendages showed that they could not be this species, and, finally, I was begged to find some distinguishing imaginal character by means of which this last-mentioned insect could be discriminated from its congeners; the specimens were exhibited at the meetings of almost all the larger entomological societies in the country, in the hope that some lynx-eyed discoverer would spot a difference, but without success, and, after referring to the unnamed insect in a "Current Note" (*Ent. Record*, xx., p. 146), as *crinanensis*, I advised Mr. Burrows to confirm the name he, or Mr. Pierce, had suggested on its genitalic characters. This he did (*op. cit.*, xx., p. 184), describing it as *crinanensis*, and finally, in 1909, Mr. Pierce published his work *The Genitalia of the Noctuidae*, differentially describing (pp. 34-35) the ♂ genitalia of the four species—*nictitans*, *lucens*, *paludis*, and *crinanensis*, whilst on p. 17 he observes that Burrows and Pierce examined close on 100 examples of the "*nictitans* group," before they satisfied themselves of the existence of several species "amongst insects which have previously been popularly considered one, confirming Mr. Tutt's suggestions of 20 years ago." This is one way of putting it, but it would have been perhaps a little more accurate if it had been urged that the examination confirmed the already settled opinion of those few who had carefully studied the species from other standpoints. The point is that the species for years had never been doubted by those few who knew them: what others thought was immaterial, and did not affect the scientific position. Anyway, the confirmation by Mr. Pierce and Mr. Burrows was most welcome and opportune in the face of Mr. South's more recently-published statement.

One would have supposed that the matter would have remained here, but Mr. Burrows, with unwearying energy, commenced the task of dissecting all the examples of the group he could appropriate. He discovered that, apart from the striking genitalic characters shown by the ♂s of the four species, equally marked characters distinguished the ♀s. He proved up to the hilt that the genitalic characters of each sex were permanently fixed. There can be no doubt on these characters whether one is dealing with *H. nictitans*, *H. lucens*, *H. paludis*, or *H. crinanensis*. So strikingly different are the genitalic characters of *crinanensis* from those of *lucens*, that one wonders whether they can even belong to the same genus, yet I must confess I cannot seize on an obvious superficial character that will unfailingly discriminate the imagines. Nor is this really all, for we understand that other genitalic puzzles still exist, and remain to be cleared up.

Now Mr. Burrows brings me his imagines—long series of the four species—all the *crinanensis*, most of the *lucens*, and many of the *nictitans* and *paludis*, tested as to their species by the genitalia; he hands over to me his mounted microscopic slides, the genitalia so splendidly mounted that one is consumed with envy to think how far in this respect he has out-distanced us all, he hands over Mr. Pierce's



excellent photographs of these slides, the most perfect that we have yet seen of these structures, and he commands me to discourse on these *Hydræcias* before the Entomological Society of London. Why I should be dragged in I do not know—I suppose to satisfy his conscience that he has, at least, done all that a human can be expected to do, to get the species he knows to exist, defined for the collector. I ask him what it matters whether a lepidopterist, who will not take the trouble to examine (through ignorance or laziness) the genitalia of his specimens, can distinguish *lucens* and *crinanensis* or not. I have myself tried to find obvious imaginal characters of distinction, and, like him, I have failed. However, he is adamant. I am to point out the facts as they stand to the entomological public, then, I suppose, I may put these *Hydræcias* in the pigeon-hole of memory again, get on with “blues” and “plumes,” and look back on this upheaval as a bad dream.

I have looked through what I wrote in 1891 in the *British Noctuae and their Varieties*, pp. 58-64, and later in the *Ent. Record*, to which reference has already been made. I see that all that we know now of the obvious characters of the imagines *H. nictitans*, *H. lucens*, and *H. paludis*, and their parallel variation, was known then. The facts remain exactly as they were written, the differentiations of these three species are there for those who seek them, I can add practically nothing to them.

I have, as will be seen above, no false sense of modesty as to what I know and what I do not know about the *Hydræcias* of the “*nictitans* group.” Stated in this absurdly truculent and assertive manner, it will draw attention to at least one of the puzzles still remaining to be solved in the British fauna, puzzles infinitely more difficult than some of those which have been attempted with regard to the Tropical fauna, and infinitely more interesting, because workers at the British species can get their own material—alive and illustrating in its living activities the phenomena we wish to explain in the one case, whilst, in the other, the worker is dependent so much, if not entirely, on the dead material collected by others. At any rate, the path is open to the stay-at-homes to breed these insects side by side, to discover the differences they exhibit in each of their early stages, to determine, in fact, if the eggs, larvæ, and pupæ of *lucens* and *crinanensis* are more easily separable by obvious characters of structure or habit than are the imagines.

### The South-eastern Pyrenees in early June.

By A. S. TETLEY, M.A., F.E.S.

At the beginning of last June I spent a week in the upper valley of the Aude in the Eastern Pyrenees, and, as the district seems to have been very little visited by the entomologist, it may be as well to set on record some of the more interesting lepidoptera observed. Our headquarters were Axat, a small place of some five or six hundred inhabitants, its one street running close to, and parallel with, the river, and surrounded by low bare hills with forest-clad mountains in the background. It can be easily reached by rail from Carcassonne by Quillan, and from it a good road runs to Mont Louis, and so over the frontier into Spain. Limestone is the prevailing formation in the neighbour-

hood, though as you climb the mountains the jagged granite peaks thrust their heads above the overlying sedimentary rocks. Good accommodation is to be had at the Hôtel Labat, and though our week was sadly marred by rain, I feel sure from what we saw of the country that its fauna and flora would prove as varied and interesting as those of the much better known district around Vernet.

North and south of Axat the road runs through two superb defiles. The latter, known as the Defile of St. George, is about a mile from Axat, and the narrow valley beyond it was by far the best hunting ground we investigated. The road runs south for 15 miles from Axat to the Baths of Escouloubres (2900 ft.), with steep pine-covered mountains on either hand, and everywhere along the roadside and in the little gullies that ran up the cliffs, we found butterflies in abundance. The most generally-distributed butterfly was *Melitaea deione*, May 30th to June 4th. It was evidently past its prime, and, though it looked fresh enough on the wing, we found that hardly one in four or five was worth keeping. Mr. Lowe (*antea*, p. 10) pronounces the form as indistinguishable from that taken by him at La Grave last summer. In the males the ground colour is very uniform, though in most the third row of the brown spots (counting from the hind margin) is just perceptibly lighter than the others. The females, as might be expected, were much more variegated; in one the outer row of lunules on the hindwings is very pale straw colour, and the black markings are coarse and heavy. The most conspicuous, if not the commonest, butterfly was *Euchloë euphenoides*, in splendid order, the females obviously not fully out, as we found plenty of them a week later at Vernet. In the males the red apical blotch was heavily marked with black on the inner edge; the black tip in the females much suffused with orange. Both sexes were large fine insects, some as large as 45 mm. in expanse. Wherever the *Biscutella* grew, one was sure to find *E. euphenoides* and its ova, and one dull showery afternoon we boxed quite a number of the butterflies from the yellow flowers they mimic so wonderfully. *Iphiclide podalirius* gen. vern. *miegii*, the spring brood of var. *feisthamelii*, flew everywhere, even up and down the village street to the vast excitement of the petits garçons. *Aporia crataegi*, *Leptosia sinapis*, and *Agriades thetis* complete the list of really abundant butterflies. In one field just beyond the St. George defile, *Melitaea aurinia* was common though *passé*. A few specimens seemed to be var. *provincialis*. Here and there one picked up *M. dictynna* var. *vernetensis*, a form almost as bright as typical *M. athalia*. It occurred a little more frequently a week later at Vernet. *M. athalia* was hardly out, odd specimens only being observed. Single examples were taken of *Loweia alciphron* var. *gordius* ♂ and *Pontia daplidice* ♂.

Two days devoted to the exploration of the big forests to the east of Axat proved very disappointing to the entomologists of the party. Butterflies were almost entirely absent, both from the meadows at the foot of the mountains and in the open sunny glades among the trees. *Pararge egeria* occurred sparingly, typical or nearly so, but very little else. The doctor, who wielded a net with great enthusiasm and success, brought back a single worn specimen of *Brenthis dia* from the Forêt des Fanges. Rondou gives it as uncommon in the Pyrenees. The bare and stony slopes close to the town, covered with cistus and



various aromatic plants, were likewise very barren of insect life. *Everes alcetas* occurred freely in one place close to the high road to Rivesaltes, and a few "Burnets" flew on one difficult slope; *Anthrocera lavandulae* and *A. trifolii* were caught and identified.

On June 5th we left Axat for Vernet. Taking train to the next station east, we walked over the mountains in a south-easterly direction to Molitg, and so to Vernet. A glorious morning gave way about eleven to clouds and mist, and the whole of the tramp across the watershed between the valleys of the Aude and the Tet was spent in heavy rain. The highest point reached was about 4000 feet, and we had hoped much from our journey over this *terra incognita*. We lost our bearings on the top, a boggy, treeless plateau, had an adventure with a Pyrenean bull, which warmed our damp half-frozen limbs, and finally got down late in the day to Molitg, a spa on the little Castillane River some five or six kilomètres north-west of Prades. Molitg would, I think, well repay a prolonged visit. Behind it lies an immense expanse of wild mountainous country, while in front the ground slopes southwards down to the valley of the Tet, and is bathed in sunshine nearly all the day. The accommodation was by far the best we fell in with during our journeyings, and the price very reasonable. On the roadside below the hotels, I made my first acquaintance with *Thais* var. *medesicaste*, which seemed to turn up singly wherever the *Aristolochia* grew. A single specimen of *Scolitantides orion* was taken, but to us *Epinephela pasiphaë* was even more interesting. It flew among the cistus bushes on the rubble slopes above the road, diving in and out of the stems close to the ground, a most provoking habit, which rendered it very hard to catch. All taken were males, and in the finest condition. A dozen satisfied us, for we fully expected to find it at Vernet, but we never saw it again. Among other butterflies there occurred *Melitaea deione*, *M. didyma*, *Plebeius argus*, and *Everes alcetas*.

A week at Vernet closed our short tour, a week of low temperatures and heavy rain. Vernet has been so much written of that I will not add thereto. Enough to say that *Melitaea deione* and *Euchloë eupheoides* were equally common, *M. didyma* and *M. cinxia* only a little less so, while *Aporia crataegi* swarmed in thousands. I noticed that red clover seemed to be far and away their favourite flower. At one place in the road above Casteil, I counted 42 *A. crataegi* sitting on a patch in the road small enough to be covered with a net, and 17 more on a smaller patch within a yard. I think *M. deione* and other butterflies found at both places were fresher at Vernet than at Axat, 1000 feet lower. *Scolitantides orion* gen. *vern. ornata* was nearly over at Vernet, while *Plebeius argus* referable to var. *pyrenaica* was only just out.

The following is the complete list of butterflies seen or taken at Axat (May 30th to June 4th), Molitg (June 5th), Vernet (June 6th to 13th):—*Erynnis althaeae*, *C. alceae* (Vernet), *Hesperia carthami*, *H. alveus*, *H. serratulæ*, *H. malvae*, *Powellia sao*, *Nisoniades tages*, *Augiades sylvanus*, *Thymelicus flavus*, *Loweia* var. *gordius*, *L. dorilis*, *Rumicia phlaeas*, *Cupido ninus*, *C. osiris* (*sebrus*) *Cyaniris semiargus*, *Glaucopsyche cyllarus*, *Agriades thetis*, *Polyommatus icarus*, *Aricia astrarche* (*agestis*), *Scolitantides orion* (not at Axat), *Plebeius argus*, *Everes alcetas*, *Callophrys rubi*, *Nemeobius lucina*, *Iphiclides podalirius* var. *feisthamelii* gen. *vern. miegii*, *Papilio machaon*, *Thais* var. *medesicaste* (not Axat), *Parnassius apollo* (Vernet), *P. mnemosyne* (Vernet), *Aporia crataegi*, *Pieris brassicae*, *P.*

*rapae*, *P. napi*, *Pontia daplidice*, *Euchloë cardamines*, *E. euphenoides*, *Leptosia sinapis*, *Colias hyale*, *C. edusa*, *Gonepteryx rhamni*, *Issoria lathonia*, *Brenthis euphrosyne*, *B. dia*, *Melitaea aurinia*, *M. phoebe*, *M. cinxia*, *M. didyma*, *M. deione*, *M. athalia*, *M. dictynna* var. *vernetensis*, *Pyrameis cardui*, *P. atalanta*, *Euvanessa antiopa*, *Vanessa io*, *Aglais urticae*, *Eugonia polychloros* (larvæ), *Polygonia c-album*, *Limenitis camilla*, *Pararge maera*, *P. megaera*, *P. egeria*, *Epinephle jurtina* and var. *hispulla*, *E. pasiphae* (Molitz), *Coenonympha arcania* (Vernet), *C. pamphilus*, *Erebia erias*.

The few Heterocera noted included *Diacrisia sanio*, *Macrothylacia rubi*, a big ♀ at light at Vernet, *Plusia gamma*, *Ophiodes lunaris*, *Euclidia mi* and *E. glyphica*, *Acontia luctuosa*, *Venilia maculata*, *Strenia clathrata*, *Fidonia conspicuata*, and the Anthrocerids mentioned above. I might add that *Brenthis selene* occurs at Escouloubres, as I have specimens taken there in 1908 by my friend James Backhouse, the well-known ornithologist. The flowers between Axat and Escouloubres, and beyond the latter place to Quérigut, were wonderful in their beauty and abundance. Specially noteworthy were the large sulphur-coloured *Antirrhinum* and purple Alpine *Aquilegia*, and at Quérigut wide expanses of white narcissi, reminding one of the hillsides at les Avants in May, 1907.

### ***Agriades coridon* var. *constanti*, generatio *præcox*.**

By DR. J. L. REVERDIN.

At the beginning of April, 1906, I found myself on the shore of the Bay of Cavalaire, in the department of Var, and was much surprised to see on the wing a Lycænid, which was evidently neither *Polyommatus icarus* nor *Celastrina argiolus*; I captured a ♂, and for the first instant did not know with what species I had to deal, but, on examination, recognised at once that it was *Agriades coridon*. This *A. coridon* was so different from the type that we have in Switzerland, whether in the plains or on the Alps, that my doubt was easily explained, the date of my capture, April 6th, being also very surprising, since with us this species makes its first appearance in the first days of July.

In 1906 and 1908 I took in the same locality, at Pardigon, a series of 120 specimens, of which 15 are ♀s. Monsieur Charles Oberthür, to whom I showed them, informed me that this very special form of *A. coridon* was not unknown to him, since he had formerly examined a long series of *A. coridon* exactly similar, taken by Alexandre Constant at St. Tropez, a small town on the coast of Var, about twelve kilomètres from Pardigon. He told me that Constant had intended to describe and name this form, but had unfortunately died before doing so. M. Oberthür has strongly urged me to study and describe this variety myself. It is, in fact, in my opinion, a special variety, which, if my information is correct, inhabits the littoral of Var; it is probably the form which Mr. Wheeler found not far from Pardigon, between Cavalaire and le Canadel (*Ent. Rec.*, 1909, p. 186), on May 6th; and which, as M. Oberthür informs me by letter, Mr. Powell has taken in the Forêt du Dom (Var). At Pardigon, this butterfly flies either on the shore, or by the side of the railway that mounts towards the station of La Croix, at a short distance from the shore. In the spring of 1906 and 1908 I took it from



April 6th to the day of my departure, the 19th, and, at this latter date, this spring brood was probably not yet nearing its end, as the specimens were still very fresh. As to the ♀s, I only took one specimen in 1906, on April 6th, and it was worn, the rest were taken between April 11th and 19th, 1908. The following are the distinctive characters of this variety; these characters are remarkably constant, judging at any rate, by my series:

Upperside: General ground tint less vivid and brilliant than in typical *A. coridon*, this tint is slightly greyish; if one places side by side two series of *A. coridon*, the one of the ordinary form, the second of those from Pardigon, those of the latter appear noticeably duller and more greyish. The forewing generally shows a small black line, more or less well-marked, at the extremity of the discoidal cell; the grey marginal border is broad, and often shows a series of dirty white lunules in its centre. The hindwing is ornamented along its outer margin with eye-spots, which are generally complete, i.e., formed by a large black point surrounded by a whitish ring, which is whiter in the part bordering the black point externally, and is generally blackish-grey internally. Underside: The ground colour, instead of being whitish as in the type, is grey, and of a very marked grey, scarcely at all browner on the hindwings, whilst in the type the two wings differ much from one another as a rule, the hindwing being yellowish, the forewing whitish. The margin of all the wings presents a complete series of black points encircled by white, these eye-spots are on the hindwings surmounted by orange lunules, bordered in turn internally with little black chevrons; on the forewings the eye-spots are edged internally with chevrons of a dark grey, which sometimes form a continuous blackish band. All the spots on the underside of both wings are very large.

These characters are, apart from the dull tint of the upperside and the dark grey colouring of the underside, similar to those of var. *rezniceki*, Bartel, which is distinguished by the discoidal mark of the forewings and the large size of the eye-spots on the hindwings above, and the large spotting beneath; but while *rezniceki* is whiter beneath than the type, the variety of Var is much greyer. The eye-spots on the upperside of the hindwings are often in the ♂ edged internally with a little fulvous (ab. *suavis*, Schultz); I do not know if this form of aberration occurs in *rezniceki*. The variety which I have just described shows a tendency to the increase of the black pigment, and the presence on the underside of the ♂s of additional black spots is frequent; of the 92 ♂s which I possess, apart from one ab. *biarcuata* and one ab. *radiata*, 12 specimens have these additional spots, one of these specimens has no fewer than 11 of them. In the ♀s I do not find any special characters so accentuated as in the ♂s, but of these I only possess 12; the only thing that strikes me is the darker coloration of the underside and the less marked difference in tint between the fore- and hindwing than is the case in other races.

In any case, the characters of the ♂s seem to me so distinctive and so constant as to indicate that we have to do with a variety which deserves to be distinguished. In remembrance of the entomologist who first studied it, I name it "var. *constanti* gen. *praecox*."

As Mr. Wheeler supposes, it is very probable that, in the localities where this variety flies, *A. coridon* may have three broods in the year. Further, if in Switzerland it has only one, it has two at Mentone, as I am informed by M. Balestre.

## A phylogenetic sketch of the Pyrameid group of Vanessids (with plate).

By T. REUSS.

While studying temperature forms I became convinced that the reason why so many aberrations often looked so curious to one, lay chiefly in the fact that the observer would always, in his mind's eye, see the facies of the type behind that of the aberration, simply because it came natural to him to look upon an aberration as a dependent form, and that, therefore, when for instance I had tried to grasp the facial details of unfamiliar foreign species, *Pyrameis myrinnæ*, Doubl., and *P. indica*, Herbst, by comparing them mentally with those in the familiar facies of *P. cardui*, L., and *P. atalanta*, L., I had unwittingly acknowledged the existence of what might be called a facial interdependence between the different species. This, if it could not mean that *P. myrinnæ* was an aberration of *P. cardui* or *P. atalanta*, certainly pointed out that these different species of to-day had radiated from a common ancestor, beginning as aberrations, local (climatic) or seasonal varieties of the central form, for, just as aberrations, budding round a central type, still facially betray their common origin, so also might a group of different species, thought of as ramifications from one central palæontological form (generic ancestor), be expected to show signs of their common origin by an interdependence in facies. Of demonstrative material in this sense, those of the Vanessids, usually grouped under the generic name *Pyrameis*, offer perhaps some of the best by reason of their daintily elaborate markings; and the aberrations that are available of *P. cardui* and *P. atalanta*, as also the veritable encyclopædia of "family likenesses" exhibited (in the field!) by *Araschnia levana-prorsa* with its intermediate forms, tender excellent material for checking the value of the evidence found in the facies of the Pyrameids themselves. In the accompanying plate (vol. xxii., pl. i) I have tried to depict some of these forms in "black and white," purposing to show the details of the patterns free from the differentiating element of colour.

These Pyrameids, which include species of world-wide distribution, as well as species which are of comparatively (or even extremely) local occurrence, illustrate strikingly that the experimentally ascertained climatic influence\* of light and temperature on the facies of butterflies, figures as the chief factor of facial change, that, indeed, when the efforts of this factor are obliterated by the habits of a species, then that species will remain facially comparatively constant all the world over†.

\* To be exact, the power of climatic influence was discovered by the natural example of *A. levana-prorsa* (the first publication on the subject being by Dorfmeister, 1864), and was afterwards experimentally corroborated.

† Before proceeding, a short sketch of the Pyrameid species giving a general oversight in the sense implied, would help to simplify my text. As is well-known, only two Pyrameids, *Pyrameis cardui* and *P. atalanta*, occur in the British Isles; both come as regular immigrants from the south. In appearance the two species are extremely unlike each other, at least to a casual observer. Now, looking on the Pyrameids of the world, the first thing that strikes one is that the several forms are divided by their facial appearance into two apparently well-defined groups of six or seven species each, in one of which the constituent species all remind one facially of the familiar *P. cardui*, and in the other they all resemble *P. atalanta*, much in the same way as aberrations resemble their types. For the sake of con-



Plate i., fig. 1, represents a very light specimen of *P. cardui*. In Mr. South's *Butterflies of the British Isles*, pl. xlv., fig. 4, a dark specimen of *P. cardui* is figured from an excellent photograph. The *light* form, induced by heat, occurs wherever the climate is suitable; the *dark* form, induced by comparative cold, is found flying in the summer either on high mountains, or, for instance, in Lapland, where its parents are always spring emigrants from the south, and are of the light or intermediate forms. These light and dark specimens seem to represent the limits of the regular facial variation of *P. cardui* under climatic (or seasonal) influence. Some examples have blue-centred, even-sized, eye-spots (ab. *ocellata*, Rbl.) on the upperside of the hindwings (perhaps an atavism), and occasionally extreme symptomatic aberrations, ab. *elymi*, Rbr., are captured. Distributed over the greater part of the globe, *P. cardui* occurs from Cape Colony, Australia, and New Zealand in the south, to Lapland and Siberia in the north; from Spain it ranges eastward through Europe, Asia, Japan, across to the Polynesian Islands and to North and Central America, thence southwards, erratically, perhaps, even to Cape Horn (compare footnote). Except in Tasmania (Australia) and in the Sandwich Islands, where *P. cardui* occurs regularly with blue centres to the eye-spots of the hindwings, as *kershawi*, the species does not appear to indulge anywhere in any variation other than that already mentioned. Climatic influence would seem not to affect this species. Whether captured in the tropics or near the arctic zone, on continents or in islands, on plains or among mountains, *P. cardui* is nearly always

venience, I will call the first group of species *cardui*-form and the second *atalanta*-form. When the distribution of these Pyrameids on the face of the globe is considered, the fact is seen that the *cardui*-form species are at home in South and Central America, while those that remind one strongly of *P. atalanta*, occur in southern and eastern Asia (one species), in Java (one species), Australia (one species), New Zealand (one species), and the Sandwich Islands (one species), and that thus the two groups remain neatly separated also by their geographical distribution. In *P. cardui* and *P. atalanta*, however, each group owns a migratory form of wonderful flying powers, and these two, especially the cosmopolitan *P. cardui*, roam almost everywhere, but *P. atalanta*, perhaps because a younger, and physically more sensitive, because more highly differentiated, form, has not yet extended its range so far as *P. cardui*, and especially does not yet occur east and south of the continent of Asia, where four of its nonmigratory relatives flourish. As to the occurrence of *P. cardui* in South America, the home of the *cardui*-form group, entomological authors seem to contradict each other, one recording the occurrence of *P. cardui* throughout South America, another allowing *P. cardui* to roam everywhere *except* in South America, but perhaps *P. cardui* will be found to have penetrated down to Cape Horn, and it is possible that only a very erratic occurrence of the species—more uncertain than anywhere else—has given rise to the contradictory evidence. Two other species, one again in each group, *P. virginensis*, Drur. (pl. i., figs. 3, 7, 11) (*cardui*-form), and *P. indica*, Herbst (pl. i., figs. 13, 17) (the nearest relative of *P. atalanta*, fig. 18), also show migratory tendencies, but in a lesser degree, the first-named ranging from South America across the Isthmus into the United States' territory, the second spreading from its Indian home into Southern Siberia (where it meets with *P. atalanta*), and eastwards to Japan. In the Canary Islands *P. virginensis* and *P. indica*, the latter as var. *vulcanica*, Godt. (perhaps both introduced by shipping?) occur together with *P. atalanta* (and *P. cardui*?). It is recorded that *virginensis* has been captured in England twice during the last century, and has been called the "Scarce Painted Lady," but I think one may assume that more specimens than those captured, were introduced accidentally, or had migrated, and that, had the climate been suitable, the species would have stayed, just as it appears to stay in the Canary Islands.

"typical" in facies. The specimen I figure (pl. i., figs. 1, 5, 9) came from the Himalaya Mountains, but I have seen specimens just like it which came from northern Germany.

When, however, the species is subjected to temperature experiments, the results show that *P. cardui* is as susceptible as any other species and capable of great facial changes. The form induced by low temperature, ab. *wiskotti*, Stdfss., is in some ways an exaggeration of the natural dark form of Lapland, and exhibits a bright *atalanta*-form margin on the dusky upperside of the hindwings, while the underside facies, as also the shape of the hindwings (fig. 19), showing the tendency to develop the Vanessid "tail," points to *Vanessa urticae* (fig. 20) and (in shape only!) to *Araschnia levana-prorsa* (fig. 14 shows an aberration) thus suggesting general "family likeness." *A. levana-prorsa* may be noted to exhibit in the forewing the shape peculiar to the Pyrameid group, and in the hindwings that peculiar to *V. urticae*, *V. io*, etc., but also in normal *P. cardui* a slight projection of the third vein of the hindwings is perhaps always distinctly visible. When exposed to high temperatures the pupæ of *P. cardui* produce exaggerations of the light tropical forms. *P. cardui* ab. *ocellata*, Rbl., distinguished by blue-centred eye-spots on the upperside of the hindwings, as in *P. carye*, Hb. (pl. i., fig. 6). The aberrative detail in ab. *ocellata* seems to be an atavism, as it tends to equalise the size of the spots, two of which are already subject to "favoured development" in light forms of *P. cardui*. The figs. 5, 9 (*P. cardui*), 6, 10 (*P. carye*), and 7, 11 (*P. virginienensis*, with a tiny spot still remaining between the two large ones in 11) illustrate this, and induce me to suggest that *P. carye*, of which ab. *ocellata* reminds one, approaches most closely to the prototype of the Pyrameids (1) from its small size, (2) from its nearly all orange forewings (fig. 2)—the light costal blotch near the apex is orange (and in shape reminds one of that in *P. atalanta* ab. *merrifieldi*, Stdfss.)—and (3) from the markings of the underside facies of the hindwings, which are much like those of *P. cardui*, *P. indica*, and *P. atalanta* (figs. 9, 17, 18), but exhibit more plainly than any of these a whitish band as in *P. virginienensis* (lower part of band also slightly masked!) and *P. myrinna* (figs. 11, 12). Such extreme facial changes from spotted or chequered to banded forms is excellently illustrated by the example of the well-known northern species *A. levana*, with its var. *prorsa*, which, perhaps, in the form *levana*, gives a good idea of what the "generic ancestor" of the Vanessids was like. The light band in fig. 14, an aberration, is not white as in var. *prorsa*; it is pale orange, but the apical blotch is whitish. In contrast with *P. carye*, *P. myrinna* (figs. 4, 8, 12), which, by its large size (the figure is from a very small specimen!), pinkish-red ground colour, and the banded facies of the hindwings, suggests that the peculiar markings and colours of *P. atalanta* (upperside facies) may be easily developed from the *cardui*-form facies, is, perhaps, the most highly differentiated species of its group, reminding one, as Professor Standfuss has noted, also of the purely tropical genus *Junonia*. I do not, of course, intend to imply herewith that *P. myrinna* is more closely related to *P. atalanta* than *P. carye*, indeed, exactly the opposite appears to be the case. *P. carye* being nearer the generic prototype would also be nearer to the species of the *atalanta*-form groups, which to-day, by their geographical distribution as compared with those of the *cardui*-form species,



plainly suggest that they had developed from separate swarms of the prototype, which once must have flooded the lands from some northern centre. But I think *P. myrinna* certainly proves that the *atalanta*-form tendency is strongly inheritant also in the *cardui*-form group. If, in fig. 4, one covers up the light inner marginal spot in the central area, and in fig. 8 the light median band with one's fingertips, both wings (in nature also in the matter of colour) at once look as though they belonged to an aberration of *P. atalanta*. Another phylogenetic aberration of *P. cardui*, which came to my notice at a time when, unfortunately, I placed no value upon it, is transitory to *P. terpsichore* of Chili in the underside facies of the hindwings, and, perhaps, is a progressive form; of the row of ocelli in the outer area, only the two that are favoured already in light specimens of *P. cardui* (fig. 9) were beautifully marked, the others had disappeared, leaving only three white discs (as in *P. terpsichore*) to mark their places in the ground colour, which was much lighter than usual. I cannot go further in my description to-day, as no specimen of the kind is in my possession at the moment. Extreme cold or extreme heat produce the symptomatic form *ab. elymi*, Rbr. (in 4 per cent. or more of the pupæ). Direct sunshine acts like artificial heat or cold, and the bred specimens are like those (rarely) captured in the field. These results, demonstrating the sensibility of *P. cardui* to the influence of light and temperature, stand apparently in direct contradiction with the remarkable facial constancy evinced by the species in nature under all possible climatic conditions, in which a butterfly can exist. Hopeless as the antagonism of facts may appear, the harmonising solution to the problem comes of itself, when it is remembered that (1) *P. cardui* is by nature a polygeneitic species belonging to the tropical or subtropical regions; (2) being a tropical species it is not accustomed to hibernate, and is, therefore, easily destroyed by any long period of cold; that (3) for the latter reason it cannot propagate its kind for any length of time in localities where the winters are occasionally severe; (4) therefore only the notoriously migratory habits of *P. cardui* explain the constant recurrence of the species in countries with well-marked seasons, such regions being dependent on a constant renewal of their stock from the south. All this, now, implies nothing less than that, under natural conditions, the climatic extremes to which the species subjects itself by migration have not time to take any considerable effect, as they only act on one generation (in Lapland where the specimens could never survive the winter), or, on two, three, or more generations in Central Europe under favourable conditions, when, however, the specimens would not remain, but would press on till they perished in the sea or in the cold of a northern winter. But, if a group of the species belying the migratory habit were inclined to stop and accommodate itself to northern conditions, or in the south to develop a special "mountain form," even then there would be little or no chance of climatic variation within that group, because any budding varietal, or even non-migratory tendency, would be simply "swamped" by the continuous influx of typical migrants, before sexual alienation had even a chance of development to prevent this. Evidently, only when local isolation assists the local climatic factors by (1) giving them time to act, and (2) allowing the effects of that action to be

cumulatively recorded and "fixed" by hereditism, can (lasting!) physiological and facial changes be brought about in a butterfly in nature—but *P. cardui* does not stop to allow for that. It could be supposed, however, that the whole bulk of the species were slowly altering. Only in Australasia, where the chances of migratory swarms reaching the land are more restricted than elsewhere, there flies as a regular variety (and perhaps in Tasmania as a separate species), *P. kershawi*, the atavic form of *P. cardui*, with the blue-centred, even-sized, eye-spots, which, in Europe, occasionally appears as an aberration. Bearing these facts in mind, it is of interest to note that the Pyraeid species resembling *P. cardui*, four of which have already been mentioned, viz., *P. carye*, *P. virginensis*, *P. myrinna*, *P. terpsichore*, as well as *P. brasiliensis* and *P. aequatorialis*, are at present still chiefly confined to different localities in South America, and do not range farther than Central North America (*P. carye* and *P. virginensis*), that, indeed, these species are local or comparatively local forms, of which only two of the less highly specialised forms have found energy enough to develop a migratory tendency. Thus *P. terpsichore* flies in Chili, *P. brasiliensis* (facially between *P. terpsichore* and *P. virginensis*) from Brazil down to the Argentine, *P. myrinna* in Brazil, *P. aequatorialis* in Ecuador. Of *P. virginensis*, as of *P. cardui*, a form with fewer black markings is known, and has been distinguished as *ab. fulvia*. *P. terpsichore* and *P. brasiliensis* are differentiated from *P. virginensis* by their smaller size, greater brilliancy of colour, absence of the two median spots in the usual row of black spots (in *P. terpsichore* only) and conspicuous dark median fascia (as in *P. cardui* but stronger), in the upperside facies of the hindwings and smaller ocelli, in a beautiful cream-coloured (but also banded) underside facies of the hindwing. *P. brasiliensis* is further distinguished from *P. terpsichore* by a whitish costal spot on the forewings between the first and second black costal spots (the latter merging into the black of the apex) the second costal blotch is better visible in *P. carye*, also the third blotch appears in some specimens of *P. cardui ab. elymi*, *P. atalanta ab. klemensiewiczzi* (fig. 15), and the row of black spots on the upperside of the hindwings is mostly complete. The whitish or rosy spot between the first and second costal blotches is familiar also in *P. cardui*, especially in its Tasmanian form var. *kershawi*. As may be gathered from these notes, the interdependence in the markings and colours of *P. terpsichore*, *P. brasiliensis*, and the other species of the group figured in pl. i., is very great, though this does not interfere with the fact that each species, as compared with the others, may be looked upon as a "perfectly original, highly finished work of art," which latter, very significantly, cannot be said of an aberration like that shown in fig. 14, the facies of which consists of a veritable *pot pourri* of undifferentiated designs, while the typical summer form *prorsa*, is again in its own way perfect in style and finish. In fig. 14 the apex of the forewings is *atalanta*- or *cardui*-form, the rest of the wing shows details found also in Vanessids, like *Polygonia c-album*, *Eugonia xanthomelas*, *V. urticae*, *V. milberti*, and the hindwing compares, in all but shape, well with that of *P. myrinna* (fig. 8) implying that, if the light orange median band, somewhat masked in most specimens, is assumed to be absent, then the remaining details are like those in *P. atalanta*. The bright-veined underside



compares again with that of *P. myrinna* (fig. 12), but it has a row of simple violet spots instead of large, ringed ocelli. As regards these latter highly differentiated markings in *P. myrinna* and *P. virginienensis*, their development has, perhaps, to a great extent, been induced by the conditions of light to which a species which flies among rich vegetation is subjected, though as the aberration of *P. cardui* resembling *P. terpsichore* has shown, the influence of temperature alone, or together with physiological predisposition, can cause a row of eye-spots to break up and leave only two larger and better-marked ocelli on the wing. It has probably been noted that the *cardui*-form species are best differentiated facially by the undersides of their hindwings; it may now be pointed out that, on the other hand, they all resemble each other most in the underside facies of their forewings, and that an *atalanta*-form species, *P. indica* (*callirrhoe*, Mill.) has a very similar underside facies.

(To be concluded).

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### Workers of *Lasius flavus* (? *L. umbratus*) among *L. fuliginosus*.

By CECIL CRAWLEY, B.A., F.E.S.

Some years ago I lived in a house where a large nest of *Lasius fuliginosus* had been established, partly in the beams in the cellar, and partly in an old stump in a hedge about 30 yards from the house. This nest had been in existence, to my knowledge, for ten years, but it was not until August, 1898, that I attempted to dig out the part of the nest that was in the hedge, and place it under observation. I succeeded in obtaining a large number of ants, pupæ, and larvæ, which I settled in a "Lubbock formicarium," allowing the ants to roam over two tables connected by a stick. The result of my excavations was to drive the ants to settle entirely in the beams of the house, where they were completely inaccessible. They travelled in search of aphides all over the grounds, and had regular tracks all round the house and garden. Their means of egress from the cellar was through three or four small holes in the angle formed by the wall of the house and the flagstones along the sides of the house. On several occasions in the spring of 1898, I had noticed odd specimens of a yellow ant walking about on the flagstones, and had supposed them to be *L. flavus*, as the lawn below abounded with nests of that ant, though it is rare that *L. flavus* ♂s leave their nests to go any distance. One peculiarity about these ants was their large size and brilliant colour, which leads one now to think that they were *L. umbratus* and not *L. flavus*. I had established my artificial nest of *L. fuliginosus* in a small room detached from the house, about six yards from the entrance to the nest in the cellar. Previously to my digging up the nest in the hedge, the ants used to skirt the outer wall of this room on their way between the two nests. I took my nest on August 20th, and the next day found that the ants had changed their pathway, and were now coming through the inside of the room along the wall.

On the night of August 25th I was watching the stream of ants with a lantern, and saw one of the large *L. umbratus* ♂s among the *L. fuliginosus*. I watched her salute two *L. fuliginosus*, who took

little notice of her. She greeted some others, one of whom made as if to attack her. I thereupon took up this *L. umbratus* ♂ and put her into my artificial nest. She was at once seized by an antenna, but released almost immediately. Several ants threatened, but did not attack her. Shortly after a large *L. fuliginosus* dragged her out of the nest. Immediately after being released, she ran back into the nest. At 5.0 a.m. next morning she was dead, and an ant was carrying her about the nest.

On August 26th I found another *L. umbratus* coming out of one of the holes in the wall used by the *L. fuliginosus*. I put her in my nest at 11.35 a.m. She entered readily, saluting all the ants she met, though they seemed to threaten her. At 12.10 p.m. a *L. fuliginosus* was cleaning her, and at 12.13 p.m. another was feeding her. At 12.20 p.m. a *L. fuliginosus* was holding her by an antenna.

At 12.30 p.m. I found another large *L. umbratus* and a *Myrmica scabrinodis*, among the *L. fuliginosus*. I put them both in the nest. The former behaved like the previous one, but the *M. scabrinodis* ran away from every ant she met, and hid in a corner, eventually escaping from the nest. The first *L. umbratus* was still held by an antenna. I then went out and found two more *L. umbratus* ♂s on the flagstones, and put them in the nest. They saluted the *L. fuliginosus*, who this time returned the salute by rapid jerks of the body. There were now four in the nest, none being attacked, the one held by an antenna having been released. Presently one came out and crossed from one table to the other on the stick connecting the two, just as numbers of *L. fuliginosus* were doing. I watched this ant cross and return, going straight back to the nest. I then took two *L. flavus* ♂s from a nest in the garden, and put them in my nest. The larger one soon found her way out without having encountered any ants, but the smaller one encountered some *L. fuliginosus*, and was at once killed. I then put a *L. niger* in the nest. She was at once chased throughout the whole nest, but her greater speed enabled her to escape. At 1.35 p.m. three *L. umbratus* were in the nest unmolested. At 2.30 p.m. two were unmolested, the third being held by a leg. At 4.10 p.m. all three were untouched, the fourth was not in the nest. At 5.0 p.m. all well, one being fed by a *L. fuliginosus*. At 7.2 p.m. two were in the nest unhurt. At 7.20 p.m. I saw a *L. umbratus* just entering the nest carrying a *L. fuliginosus* larva (the *L. fuliginosus* used occasionally to carry larvæ across to the other table and back again). Just inside the nest she met a *L. fuliginosus*, who took the larva from her. The *L. umbratus* then turned round and crossed the stick to the other table again. No others were inside the nest, but I could see no dead ones anywhere.

Next day, August 27th, at 10.45 a.m., one was in the nest. At 12.0 noon two were in the nest. At 1.45 p.m. ditto. At 3.28 p.m. ditto. One was moving the *L. fuliginosus* larvæ about. At 5.10 p.m. still two inside. One was being fed by a *L. fuliginosus*. August 28th, at 9.30 a.m. one was in the nest, no others being visible. At 10.40 a.m. two in the nest, one occupied in plastering earth against one side of the frame. At 2.0 p.m. two in nest. At 10.0 p.m. ditto. August 29th, at 10.0 a.m. two inside nest. At 3.30 p.m. ditto. One was feeding the larvæ. At 5.45 p.m. one inside being fed, another out on the table. When I disturbed the nest the former helped the *L. fuliginosus* to move the larvæ. August 30th, I could see no *L. umbratus*



anywhere, but there were no dead ones to be found. I put a *Formica rufa* in the nest. They attacked and chased her out. September 1st, at 10.0 a.m. I found two more *L. umbratus* on the flags, and put them in the nest. The first *L. fuliginosus* they met greeted them as friends. At 10.30 p.m. both at home in nest. At 11.0 a.m. one inside, the other not visible. At 11.30 a.m. both inside. At 2.0 p.m. ditto. I visited the nest at 4.0 p.m., 5.0 p.m., and 6.30 p.m., and found both all right, one helping to clean the larvæ. September 2nd, at 9.30 a.m. one was dead, but showed no signs of having been damaged. The other one was all right. At 7.0 p.m. the remaining ant all right. They had removed the dead one. September 3rd, at 10.0 a.m. the ant still in nest, quite at home. September 4th, ditto, at 9.50 a.m., 1.5 p.m., and 6.30 p.m. September 5th, at 10.45 a.m., the *L. umbratus* was dead, though apparently uninjured. I was unable to continue these experiments from this date.

About one ant in eight in this nest of *Lasius fuliginosus* carried an *Antennophorus*\*. Some had white parasites located on the back of the thorax. There was also a number of small red spider-like mites which ran about among the larvæ, and some larger parasites, about the size of an *Antennophorus*, among the larvæ, sometimes on a larva, but not attached to it.

### Wing Measurements of Lepidoptera.

By J. W. TUTT, F.E.S.

I have recently been much interested, and not a little disturbed, by my inability to make the measurements (wing expanse) sent to me by some of my esteemed continental correspondents tally with others of the same species, which I myself supposed were accurate for the same districts, in some of which I had worked. A little enquiry soon elicited the fact that measurements of wing-expanse are generally made by continental lepidopterists not from the centre of thorax to the wing-apex on either side (or from the centre of thorax to one wing-apex  $\times 2$ ) as in this country, but across an imaginary line drawn in front of the set insect from the apex of one forewing to that of the other. This, of course, not only cannot give the real expanse of the insect, but it is sometimes so much less than the real expanse that one forms an entirely erroneous idea of the size altogether. In some specimens of of *A. coridon* in question, in which the real wing-expanse amounted to 38mm.-40mm., the measurements from wing-apex to wing-apex was fully 6mm. less when measured across in continental fashion.

Another matter has discovered itself. It appears that some of our own collectors, in giving information *re* insects set to show the undersides, speak of the wings as left or right exactly as they appear in the underside insect. Of course, set to exhibit the underside, the true right wings are on the left side of the pin and *vice versa*, but they remain the true right and left wings nevertheless, and should be so called. Great muddle might otherwise occur (possibly has already

\* The species would be *Antennophorus grandis*, Berl. It was described by Berlese in 1903 (*Redia*, i., 1903, p. 392). I took it at Wellington College, in 1906, with its host, *Lasius fuliginosus*, and have since found it with the same ant in various localities, and recorded it as new to Britain (*Ent. Rec.*, 1907, p. 6). It will be seen that Mr. Crawley observed it in 1898.—HORACE DONISTHORPE.

occurred). The right pair of wings, in whatever manner (underside or upperside) the insect may be set, must always be the pair on the right side of the insect when at rest alive, and in a natural position.

These points are important to the writer just now, and he hopes that his continental correspondents will copy the facts of this note into their own magazines, so that some intelligible uniformity in these matters may result.

## COLEOPTERA.

*QUEDIUS NIGROCERULEUS*, Rey.—I have to record this interesting species from a fresh habitat—a wasp's nest. The nest was unearthed on Ditchling Beacon, Sussex, September 12th, 1909. Besides the *Quedius*, of which I took one ♂ specimen, the nest yielded a few *Cryptophagus setulosus*, Stm. I also took *Q. nigrocoeruleus* at Grantchester Meadows, near Cambridge; on this occasion, the beetle was found in moles' nests, some eight specimens being secured in half-a-dozen nests.—HERWARD C. DOLLMAN, F.E.S., Hove House, Bedford Park. January 28th, 1910.

*AMARA ANTHOBIA*, VILLA, NEAR LONDON.—I captured a specimen of *A. anthobia* on Barnes Common, in February, 1903. It is a very typical example, presenting all the characteristics of the species.—Id.

**COLEOPTERA IN THE CAMBRIDGE DISTRICT.**—I secured several specimens of *Badister unipustulatus*, Bon., by searching broken reed débris in May, 1909. *Scymnus limbatus*, Steph., I found very rarely on Coe Fen, under willow-bark, in May.—Id.

**COLEOPTERA FROM DITCHLING, SUSSEX, IN AUGUST AND SEPTEMBER, 1909.**—*Falagria thoracica*, Curt., a few specimens at roots of *Lotus corniculatus* on the Downs. Of *Trichonyx märkeli*, Aub., one more specimen of this interesting beetle was taken on September 17th. It was found when searching at the roots of low plants on the face of Ditchling Beacon. *Cyrtusa pauxilla*, Schm., one specimen only swept off *Filago* sp.? *Hydnobius punctatissimus*, Steph., some half-dozen specimens taken in all, two on wing at the end of September, the remainder by sweeping. *Hydnobius strigosus*, Schm., two specimens by sweeping. *Clinocara tetratoma*, Th., a ♂ and ♀ taken by beating an old hedge. *Psylloides dulcamarae*, Koch, is extraordinarily local in the Ditchling district; in 1906, 1907, and 1908, I worked the *Solanum* hard for it, but not until this last year was I rewarded, when I found some large plants bejewelled with it on nearly every leaf. *Mordellistena parvula*, Gyll., var. *inaequalis*, Muls., a ♂ specimen swept up on the 12th, and a ♀ on August 13th, 1909; both from the same flower-covered slope. *Choragus sheppardi*, Kirb., one specimen taken on October 10th, by beating *Clematis vitalba*. *Liosoma oblongulum*, Boh., I was very pleased to find that a single *Liosoma* I swept up in September, proved to be *L. oblongulum*. In April, 1908, I took a couple of the var. *collaris*, Rye, of *L. ovatum* by sifting thick wood-moss. *Hypera mirina*, F., one ♀ swept off *Onobrychis sativa*, and one ♂ by general sweeping. This is always a scarce weevil at Ditchling. *Cissophagus hederea*, Schm., one specimen from ivy in the garden hedge—this ivy is riddled by *Pogonochaerus dentatus*, Fourc., which may be beaten out in moderate numbers.—Id.



## NOTES ON COLLECTING, Etc.

*ORTHOLITHA BIPUNCTARIA* IN NORTH DEVON.—On August 14th last, I took a pale typical specimen of *Ortholitha bipunctaria*. There is no chalk anywhere near here, and I do not know of any record of it in these parts. I have never seen it before here during the twelve years I have been here. Perhaps you may think it worth recording.—T. H. BRIGGS, M.A., F.E.S., Rock House, Lynmouth, Devon. January 20th, 1910.

*YPONOMEUTA EVONYMELLUS*, L., IN ROXBURGH.—We have much pleasure in recording this southern Yponomeutid for the first time in Scotland. We found it during September, 1909, in some numbers along the north bank of the river Liddel, which here forms the "border." The insects were thus only just in Scotland, but, curiously enough, they were also within a few hundred yards of Dumfries-shire. The actual locality was about two miles downstream from Kershopefoot Station, but on the north bank of the river Liddel. The Yponomeutids are a "difficult" group. It may therefore be well to confirm our identification by stating that the insect is thus distinguished from its near allies—white fringes to forewings—five or six longitudinal series of black dots, lowest including eight to eleven dots. Meyrick says, "England, North Ireland, local."—P. A. AND D. A. J. BUXTON, School House, Rugby. February 18th, 1910.

*CEMIOSTOMA (LEUCOPTERA) LABURNELLA*, STT., IN CUMBERLAND AND ROXBURGH.—On August 23rd, of this year, we observed this insect in large numbers on *Cytisus laburnum* in a garden at Stanwix, Carlisle. We also found it during August and early September in great numbers on a laburnum, at Liddelbank, which is in Roxburgh, within 100 yards of Cumberland and 300 yards of Dumfries-shire. Meyrick does not notice it north of York. It may be worth mentioning that it is common at Rugby, and also in Leeds.—P. A. AND D. A. J. BUXTON, School House, Rugby. February 18th, 1910.

## VARIATION.

*MELITÆA DICTYNNA* VAR. *BRITOMARTIS*, WHEELER, FROM REAZZINO.—Mr. Lowe's paper, in *Ent. Rec.*, xxii., p. 34, just to hand, reminds me that I ought to proceed faster with the examination of the ancillary appendages of the Melitæas, which I have for some time contemplated. There is, however, one fact that I think I have determined with certainty, thanks to Mr. Wheeler having generously supplied me with specimens, and that is, that the *britomartis*, of Reazzino, whatever the true *britomartis* may be, is a form of *M. dictynna*, very close, therefore, to the var. *vernetensis*. It deserves a varietal name of its own, and I should note it as var. *wheeleri*, the diagnosis being a form of *dictynna*, very similar to the var. *vernetensis*, which is found (double-brooded) at Reazzino, in the Ticino.—T. A. CHAPMAN, M.D., Betula, Reigate. February 14th, 1910.

*BRENTHIS SELENE* VAR. *CASTILIANA*, LOWE.—*BRENTHIS HECATE* RECORDED IN ERROR AT LA GRANJA.—On reading the Rev. F. E. Lowe's note on p. 23 of the current number of the *Entomologist's Record*, I examined carefully the examples, two in number, I had taken at La Granja, in 1905, and had recorded in vol. xviii., p. 59, as *Brenthis hecate*, and found that they are not that species, but are identical with

the form of *B. selene* which Mr. Lowe has taken there and named var. *castiliana*. Like Mr. Lowe, I was led into the error, by the superficial resemblance of the specimens to *B. hecate*, which, being a widely spread Spanish species, one would think should be found at La Granja; they resemble some Spanish examples of that species I have from the Albarracin Sierra much more closely than they do specimens from Eastern Europe.—W. G. SHELDON, Youlgreave, South Croydon. February 5th, 1910.

ABERRATIONS OF ANTHROCERIDS.—At the meeting of the South London Entomological Society, held in December, 1909, I exhibited five peculiar specimens of *Anthrocera filipendulae*, Linn., viz.:—♂ ex collected cocoon, June, Lewes, ♂ ditto, Winchester, end of July; ♀ ditto, Clandon, mid-August; ♂ captured Clandon, mid-August—all, especially the last, with grey ground, pale pink spots, etc., and whitish cilia to all wings; also ♂ captured Winchester, mid-July, all spots small, the 6th (divided by nervure) especially so; hindwings with indigo-blue border, 1.5mm. wide; all the above taken on dry chalk slopes. I also exhibited, from a Sussex locality, *Anthrocera hippocrepidis*, Stphs., a specimen with brownish border, 1mm. wide to hindwings, the 5th spot large squarish, budding at the lower external angle, looking like on 6th spot, but apparently too high and too far from margin for the normal 6th spot. *Anthrocera trifolii*.—(1) Pale cherry-red and dark grey-green in colour, with whitish cilia to hindwings; captured in Sussex. (2) Two series of dwarfs from two Sussex localities some miles apart, the first locality giving only small examples—23mm.-27mm., with occasional specimens up to 30mm.; the second locality producing examples grading from 22mm. to 34mm.—G. HODGSON, M.D., Stoneleigh, Redhill, Surrey. January 30th, 1910.

## NOTES ON LIFE-HISTORIES, LARVÆ, &c.

EGG OF ARGYNNIS NITOCRIS VAR. NIGROCÆRULEA.—Among some old papers, I have come across my wife's unpublished notes on the eggs of *Argynnis nitocris* var. *nigrocaerulea* (original description of this race, *Entom. News*, vol. xi., p. 622, 1900). I transcribe them just as originally written:—

"August 24th.—Confined females [from Beulah, New Mexico] over violets.

August 25th.—Saw female in act of placing eggs; glue placed on surface, then egg: [egg slightly over 1mm. high and broad], cone-shaped, flattened on top, bearing from fifteen to twenty ridges, each ridge marked with from ten to twenty cross-lines; colour when first laid light yellow. Eggs laid on violet leaves, lower and upper sides, and petiole, also on grass leaves, dried stems, and screen on top of cage.

August 28th.—Eggs laid on 24th look brown, examined with lens, the brown colour found to be due to irregular small brown spots. A yellow line extended around the cone about half way from top to bottom."—WILMATTE P. COCKERELL.

This may be worth printing in *Ent. Record*, especially if you can add any comments showing how all this compares with other species. *A. nitocris* is one of a group of very striking species, with dark females. I remember that we compared the egg with that of *A. eurynome*, Edw., and found it decidedly different.—(Prof.) THEO. D. A. COCKERELL, 908, 10, W. Boulder, Colorado. January 6th, 1910.

ANTS AND LYCÆNID LARVÆ.—On June 26th of last summer, near Crevola, on a bank where *Sedum album* and *S. telephium* grow, I picked up an apparently full-fed Lycænid larva, which I took to be



that of *Scolitantides (Polyommatus) orion*. It was of a pale dingy green, with a light claret-coloured dorsal stripe—head black. A raised lump on each segment, from one of which I think the penultimate, it protruded, and quickly withdrew, two little warts. It was crawling slowly along, across a stone, attended by some small reddish ants, two of which I boxed with it. It never fed, and after several days of restless wandering about its prison, it took up its position, as I hoped, for a moult. However, it had been "stung," and next day parasitic grubs began to emerge, and by nightfall 14 or 15 small white cocoons were in "evidence," upon and around the shrunken body of the larva. The ants still faithfully stuck to their posts, until I threw the lot away. Whatever other advantages the association of ants with Lycinid larvæ may bring to the latter, it is clear that protection from parasitic flies is not always (if ever) to be counted as one of them.—W. H. ST. QUINTIN, Scampston Hall, Rillington, York. February 4th, 1910.

## CURRENT NOTES.

Dr. Malcolm Burr is representing the Entomological Society of London, the Linnean Society, and we believe also the Zoological Society of London, at the Jubilee of the Entomological Society of Russia. He left for St. Petersburg on March 5th, and will be absent about ten days. It is most fortunate that we have a quite first-rank entomologist able to speak for us in the native language at such an important ceremony as this. His energy also as the British secretary of the International Congress of Entomology to be held at Brussels is making itself felt, but we believe we are right in stating that he does not consider the more wealthy British entomologists are supporting this important venture so strongly as the occasion demands.

The last meeting of the Entomological Club was held on February 22nd, 1910, at 58, Kensington Mansions, South Kensington, when Mr. H. St. J. K. Donisthorpe was the host. The members of the club and friends, who were received by Mr. and Mrs. Donisthorpe, began to arrive at 6.30 p.m., and by 8 p.m. the following were present:—Drs. Malcolm Burr, F. A. Dixey, S. F. Harmer, K. Jordan, Messrs. R. Adkin, E. C. Bedwell, F. Bouskell, Rowland-Brown, J. Collin, Hereward Dollman, Willoughby Ellis, Selwyn Image, A. H. Jones, C. Morley, J. R. le B. Tomlin, J. W. Tutt, and G. H. Verrall. Supper was served at 8.30 p.m., and the pretty menu, decked in Mr. Verrall's "election colours," pink and white, as were also the table decorations, will long remind one of a most enjoyable evening spent in most congenial society.

Professor W. Bateson has given up his post as Professor of Biology at Cambridge University, to become director of the new Horticultural Institute at Merton. Mr. Reginald Crundall Punnett, M.A., Fellow of Gonville and Caius, has been elected to the Professorship of Biology in his place. Professor Punnett is now Superintendent of the Museum of Zoology; he was Walsingham Medallist in 1900, Balfour Student in 1904, and Thruston Medallist in 1908.

"A contribution to our knowledge of the entomological geography of the Upper Klar river valley" (*Arkiv Zool. Sv. Vetensk. Stockholm*); "Lepidoptera from the oak-region of Varmland" (*Ent. Tidskrift*, 1908), and "Survivals and pseudo-survivals of the glacial period

among our butterflies" (*Faun. Flora Mag.*, 1909), are three interesting papers that have been forwarded to us by the author, Herr Einar Wahlgren, and, as a contribution to our very incomplete knowledge of the distribution of Scandinavia (Swedish) butterflies, are especially welcome. To the majority of British collectors, Sweden is *terra incognita*. With few exceptions, the observations of local entomologists, especially lepidopterists, are scanty, and Herr Wahlgren is, therefore, the more to be congratulated upon the pioneer work he has done (1) in the upper valley of the Klarälf, the magnificent river which falls in Lake Vettun, at Karlstad, rising far away north in the lakes of Norwegian Hedemark. North Finnskogen is situated just under 61° (the latitude of the Shetlands), Eksbärads—the southernmost point of observation—about 56 to 60 miles lower down the stream. The fauna appears, however, to be more middle-European than arctic, including *Papilio machaon* and *Cyaniris semiargus*, whilst *Brenthis aphirape* var. *ossianus* only appeared at the most northerly point visited. In addition to this—the pine-wood region insect fauna—Herr Wahlgren gives us (2) a supplementary list of lepidoptera compiled by himself and various entomologists—especially the local museum authority at Karlstad, Herr Christernsson—"The butterflies of Värmland's oak-region," and these, among others, include *Parnassius apollo*, *Limenitis populi*, and *Coenonympha hero*, while, putting his observations to practical use, he sums up, in the third paper (3) under review, his conclusions as to (a) the Scandinavian butterflies which are to be regarded as true arctic species, and (b) those which have in post-glacial times established themselves from the south and the south-east, the gradual recession of the ice and the amelioration of the climate favouring, for example, a wider distribution of true arctic survivals, as well as species like *Colias palaeno* and *Brenthis pales*, which, coming from the south, are to be regarded as "psendo-relikter."

Mr. E. A. Butler adds *Cyrtorrhinus geminus*, Flor., to the list of British hemiptera, on the strength of a specimen taken at Broxbourne last September, and another of uncertain locality. He also adds *Chloriona dorsata*, Edw., to the list of British Homoptera, from specimens taken on reeds in a pond, in Epping Forest, in June and July.

Dr. Wood states (*Ent. Mo. Mag.*) that the dipteron introduced by him some five years ago as British, under the name of *Callimyia elegantula*, proves to be a *Callimyia* of unknown species, and not *Agathomyia elegantula*, Fall., as was supposed, and two examples of which have now been identified; these latter were swept from under old spruce-trees in Stoke Wood, Herefordshire, in October, 1905, and September, 1908. He also states that between September 25th and October 18th, 1907, he found five examples of *Agathomyia zetterstedti*, Zett., in Ashperdon Park and Tarrington, so that this species has to be added to the British list.

Mr. J. E. Collin, in some additions and corrections to the British list of *Muscidae-Acalypterae*, notes *Cordylura atrata*, Zett., from Nethy Bridge, June, 1905; *Acanthocnema nigrimana*, Zett., from Braemar, July, 1872, and *A. glauca*, Lw., taken at Tarrington, July, 1909, as new to the British list.

Dr. N. B. Joy states that all the British *Oxytelus fairmairei*, Pand., recorded from moles' nests, are most probably *O. sauleyi*, Pand., a



species new to the British list, the former being apparently a dung species. Besides moles' nests, Dr. Joy says that he has taken *O. sauleyi* in flood refuse.

Dr. Sharp states that *Phaedon concinnus*, Steph., is specifically distinct from *P. armoraciae*, whilst he separates the allied *tumidulus* generically under the name *Paraphaedon*.

Mr. E. R. Bankes adds *Cemiotoma susinella*, H.-Sch., to the British list from two specimens taken among its foodplant, aspen, at Aviemore, on June 17th and 19th, 1909. The species is double-brooded, the larvæ mining aspen leaves in July and again in September.

Mr. Edward Saunders notes that Thomson has split the examples hitherto combined under the name *Pemphredon morio*, Fab., into two species, both of which occur in Britain. These Thomson renames, neither being referred to *morio*, Fab., nor to *anthracinus*, Smith. The names given by Thomson are *clypealis* and *carinatus*, but it is clear the matter of names cannot end here.

Mr. Saunders also adds *Diodontus friesei*, Kohl., to the British list, from examples taken at Oxshott and ? Woking, and *Dufourea halistula*, Nyl., from a ♀ taken on Woking heath. He also describes a new species *Halictus arnoldi*, near *H. minutissimus*, from specimens taken at Hellingly, near Eastbourne, August 14th, 1908.

In August, 1868, the Rev. C. J. S. Bethune, M.A., D.C.S., F.R.S.C., published the first number of the *Canadian Entomologist*. Since then 41 volumes have been published, of which Dr. Bethune has edited all but 3 (*viz.*, vols. vi-viii), which were produced under the editorship of Dr. Saunders. In his 72nd year, Dr. Bethune finds his eyesight failing, and his desire that a successor should be appointed has ended in the Executive of the Entomological Society of Ontario appointing him Editor Emeritus of the journal, whilst Dr. E. M. Walker, Lecturer in Biology at the University of Toronto, has accepted the position of General Editor. It would be impossible to find anyone who has done more for Canadian entomology than the hard-working entomologist who has so well-earned his retirement.

It is with the greatest possible regret that we have to note the death of Edward Saunders at the age of 61, on February 6th. Twenty-five years ago when we first joined the elect as represented by the Entom. Society of London, one of the most interesting personalities in the Society was Edward Saunders. Ever since, he has been, as far as his unsatisfactory health would allow, an active supporter of the Society, serving officially as Vice-President, Treasurer, and Member of Council, whilst, at the time of his decease, he was a member of the Business and Publication Committee of the Society. He would more than once have been unanimously elected to the Presidency had he allowed his name to have been brought forward but he always refused on the ground of ill-health. He was first and foremost an excellent hemipterist and hymenopterist. His standard works on these orders are known to all, and need no commendation from us; they are sound and trustworthy, and no one, perhaps, had a better grip of, or did more to elucidate our knowledge of, the British species than himself, and he was particularly well-informed in the work of the authorities on these orders. His books contain fewer mistakes, perhaps, than those of most authors who have dealt with the less exploited orders. He was also a good coleopterist, and we believe

began his entomological work as a student of this order. He was made a Fellow of the Royal Society in 1902, an honour nowadays rarely conferred on an entomologist, owing to there being so much competition for the few available Fellowships each year among those whose professional work lies in other branches of science—especially applied science. An excellent obituary notice (and photograph) is to be found in the *Ent. Mo. Magazine*, on the editorial staff of which he has been since 1880.

Mr. C. O. Waterhouse was elected unanimously to the vacancy on the Business and Publication Committee of the Entomological Society of London at the meeting of the Council held on March 2nd, in the place of Mr. Edward Saunders, deceased.

We regret to hear also, after a long and painful illness, of the death of Harry McArthur, a professional collector of great acumen, exceedingly well-informed, but of most modest and retiring disposition. His decease took place on February 8th. He was 54 years of age.

We hear that Mr. T. Bainbrigge-Fletcher has been appointed an assistant at the Pusa Agricultural College, by the Indian Government, and left for Calcutta about the commencement of March. There must be unlimited opportunities for scientific entomological work in India, and one expects great things from this appointment. There have been many lepidopterists at work in India, but Mr. Fletcher's well-known preference for certain groups of the micro-lepidoptera, and his keenness in field observation, leads one to feel satisfied that, in these directions, many new discoveries will be made in the immediate future.

At a Congregation held at Cambridge University, on February 17th, the Vice-Chancellor (Dr. Mason, Master of Pembroke) presiding, Professor W. Bateson (St. John's), the Hon. N. C. Rothschild (Trinity), and Mr. H. Scott (Trinity) were appointed to represent the university at the International Congress of Entomology to be held at Brussels in August.

## SOCIETIES.

THE LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY.—*January 17th, 1910.*—MENDEL'S THEORY OF INHERITANCE.—Mr. C. F. Walker, M.A., by means of some excellent lantern slides, gave a very lucid and interesting account of Mendel's discovery, and also adverted to the recent work which has been done by numerous investigators. Mr. Walker mentioned the experiments of Messrs. Prout and Bacot with *Acidalia virgularia*, instancing it as a case of "Blended Inheritance," in which the Mendelian principle did not appear to apply. *HYDROECIA CRINANENSIS* IN ENGLAND AND IRELAND.—Mr. F. N. Pierce exhibited a female specimen of *Hydroecia crinanensis* captured at Bolton, Lancs., in 1897, by Mr. J. E. R. Allen. This is the first record for England. Mr. Allen has also recorded the species from Enniskillen, Ireland.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY.—*January 27th, 1910.*—AUTUMN LEPIDOPTERA.—Mr. Tonge and Mr. Colthrup exhibited long series of *Hybernia aurantiaria*, *H. defoliaria*, and *Himera pennaria*, taken in the New Forest, November 17th-19th, 1909, where they were abundant in spite of the weather being clear and frosty. Mr. Colthrup exhibited a *Gonepteryx rhamni*, found at the same time hibernating among holly.



## The Lepidoptera of the Staefa Bogs in 1909.

By J. W. TUTT, F.E.S.

The Lake of Zürich sparkled gloriously, and Staefa was bathed in brilliant sunshine when we arrived there on July 23rd, 1909, to pay another visit to Mr. Muschamp, and with the idea of picking up some threads that we had lost all too soon the previous year when exploring the bogs among the hills at the back of Staefa. These bogs were so entirely new to us as a collecting ground that one feels one could never get tired of them, and we still feel that we would like to spend some considerable time studying the micros which abound there, and which we unfortunately had no time even superficially to sample. The work we are engaged on, the life-histories and habits of our butterflies, demand all our attention, and more than all our leisure, and one has to keep one's nose very closely to the grindstone, both in and out of holiday season, to get ahead with what seems a never-ending entomological task. This will be considered, perhaps, only a lazy excuse by our micro-lepidopterists who might reasonably expect one to give them at least some material and some details from so prolific a spot, as a contribution towards their special work. We have already described the bogs of Staefa, their numerous springs welling out from the hillside, and the pine-woods that back them up on the side nearest the lake and Staefa, and there is no need to add to what we have already said as to the beautiful outlook as one climbs up behind the town into the fields and looks across the lake to the mountains on its southern side. The morning of the 24th was perfect, as we wended our way towards the bogs again, with memories, however, that would not be silenced, that had recently come from other visitors to Switzerland, to the effect that the weather had been atrocious in Switzerland right into July, that storm and cold had been the order of the day, that insects were amazingly backward and scarce, and that one need not expect to get much in the usual well-provided haunts this season; Mr. Muschamp had also reported unfavourably, and so our spirits were not unduly elated at expected success.

That the season was later and altogether less prolific than the preceding year was evident. The large numbers of common species observed in the town itself in 1908 were altogether wanting, scarcely any Pierids, and no sign of Coliads or Vanessids. *Enodia hyperanthus* and *Epinephele ianira* were only just emerging, and the former was apparently especially well-spotted on the underside, with, occasionally, the spots tending to a slightly elongated pear-shape (ab. *elongata*, n. ab.) suggesting the more highly developed form ab. *lanceolata*, Frohawk, whilst a very bright brown form of the underside (ab. *brunnea*) appeared to us unusual. *Augiades sylvanus* and *Adopaea flava* were still abundant and not worn to shreds as they were in 1908, and a beautiful example of *Papilio machaon* proved quite worth the time spent in carefully stalking it. *Leptosia sinapis* now and again fluttered along in its leisurely manner, but the summer brood was evidently not fully out, whilst an occasional *Lowea dorilis* only made up for its comparative abundance of the preceding year. Turning into the open wood just before the bogs were reached, *Melanargia galatea* was frequent, as it had been by the roadside just previously; so also was *Pieris napi*, and

APRIL 15TH, 1910.

one was not altogether surprised to find *Dryas paphia* and *Argynnis adippe* getting somewhat passé, whilst an overhead stroke at a specimen not clearly determined as it flew swiftly past, settled the insect for a newly-emerged *Eugonia polychloros*. On the thistle-flowers were some freshly-emerged *Anthrocera trifolii* and *A. filipendulae*, the former wanderers from the adjacent bog, and *Gonepteryx rhamni* occurred frequently, though in nothing like the abundance of the preceding year. Over the bushes a fresh brood of *Celastrina argiolus* was on the wing, only ♂s, however, were netted, and there was a suspicion that these were rather obsoletely spotted on the underside of the forewings. Turning into a piece of bog enclosed in the wood, the first somewhat unexpected capture was *Callimorpha dominula*, several of which were observed on the thistle-flowers. A few eggs were obtained, the larvæ of which have fed steadily ahead, chiefly on roses, and not one of which died until a few days since (February 20th, 1910), when the more forward ones moulted apparently into their last skin, and a serious mortality set in. A number of *Botys hyalinalis* were disturbed from among the undergrowth, whilst just at the entrance a small bright form of *Coenonympha arcania*, in fine condition, was not uncommon, yet so localised, that all the specimens observed must have been within an area of about 20 yards square; *Melanargia galatea*, too, was common on the edge of the bog, whilst *Melitaea dictynna* was frequent, and some examples still in really good trim. Occasionally a swifter-flying Anthrocerid crossed one's path, and one knew at once, now that one was alive to it, that it was *Anthrocera viciae* (*meliloti*). The habits of this species are quite different from those of *A. trifolii*. It is altogether more alert and more active than its congener, and, even when resting on its favourite flowers, is not by any means to be picked off with the fingers as is the case with most species of the genus; it flies most freely in the early afternoon but the net may be wanted for its capture at all times of the day. Soon the first *Coenonympha tiphon* appeared, although the species was by no means common here, and the chance disturbance of a *Toxocampa pastinum* soon prompted us to a hunt sufficiently successful to show the species was common, whilst a similar chance capture of *Hydrelia unca* also led to further investigation, and one was interested in finding these two species together as in our homeland fen at Chippenham. A few *Coenonympha pamphilus* were noted and a few large and rather worn *Cyaniris semiargus*, and then a start was made for the larger bog. Walking through the open wood, it was noticed that a single *Thymelicus acteon* alone represented the dozens of the previous season, whilst *Acidalia ochrata* was an unexpected addition to the fauna. An occasional example of *Adscita statice* occurred as in the preceding year, altogether four were noted, all ♂s, and three in good condition. A single ♂ *Agriades coridon* was in the nature of a surprise, it was the only specimen seen on either visit.

Reaching the larger bog, *Coenonympha tiphon* was found at least as abundant as the preceding year and in about the same condition, so that the unsatisfactory weather of the spring or early summer had affected this less than the other species already noted. A beautiful series was captured exhibiting a very wide range of variation both on the upper- and underside, yet all within the limits of the British "middle" form, the finest example being one in which the pale stripe



on the underside of the forewing was extended towards the margin in the form of a wide pale band containing five ocellated spots, of which the third and fifth were the smallest—the usual pallid outer rings of the spots being seemingly greatly extended to help to form the pale band (ab. *virgata*); the underside of the hindwing is normal except that the seven ocellated spots are exceptionally widely-ringed with pale. No other example approaches this form, and, although several have the pale transverse line crossing the underside of the forewings well-developed and somewhat extended towards the ocellated spots, in no other does it form a band so as to include the spots.

On our previous visit we made acquaintance with another species which we had never met in nature before. This was *Anthrocera viciae* (*meliloti*). So busy were we with the butterflies that were so numerous and abundant, that we paid little attention to the Anthrocerids, and, as a result, did not collect more than a dozen examples, and these not in good condition (see vol. xxi., p. 248), as reminders that they were there. In writing up our reminiscences of the bog, the mind did not specifically dwell on these examples, although Mr. Muschamp had called our attention to the peculiarly small forms that lived there. We had casually glanced at some examples that we had no doubt were *A. trifolii*, but failed entirely to grasp that we were dealing with two species, one of which, known well enough in the collection, was quite unknown to us in nature; this species, as noted above, was *A. viciae*, and it was not until we were moving the specimens from the box in which we had packed them that we appreciated the blunder that we had made in our short notes (*antea*, vol. xx., pp. 247, 248) which want cancelling altogether, but will, unfortunately, remain an excellent witness against us of being "too clever by half." The species there noted as *A. trifolii-minor* is *A. viciae* and the ab. *ruficincta* is the well-known ab. *stentzii*, Frr. (see *A. Nat. Hist. Brit. Lep.*, i., p. 456). This year we nearly fell into another pitfall, one, at any rate, that has done us good by pulling up our knowledge, now alas, getting rusty, of these interesting insects. The fact is there are four of our British Anthrocerid species living almost on the same ground on the Staefa bogs. The first is *Anthrocera viciae* var. *buglossi*, Duponchel, originally described, as we have already noticed (*A. Nat. Hist. Brit. Lep.*, i., p. 457), from specimens that came from this very district (Zürich). (2) *Anthrocera trifolii*, inclining to a somewhat small race of the *palustris* form. (3) *A. filipendulae* interesting enough in their bright colour but certainly not *A. hippocrepidis*, Stphs., as we had thought might be the case. These all occur in the grassy openings of the woods all along the upper edge of the bog, and extend into the nearer parts of the bog itself, where, however, *A. trifolii* is more frequent than on the banks. Much farther along, on the banks under the wood and beyond the bog itself, a great mass of what we believe was *Vicia cracca*, mixed with flowering thistles, was found to be covered with (4) *Anthrocera lonicerae* and *A. filipendulae*, the former quite separate and distinct from *A. trifolii*, which did not appear to occur just here, the former being, indeed, wonderfully localised; nor did we among our samples get a specimen of *A. lonicerae* the previous year; whilst (5) a single *A. transalpina* added yet another species to this prolific district. Out of the clumps of undergrowth here also, we disturbed several *Toxocampa pastinum*, a species that lives on the same foodplant with *A. lonicerae* in the woods

at Chattenden. It must be a rare thing to find all these species so nearly on the same ground. To us *A. trifolii* has always been a most elusive species on the continent, and we have no recollection of having ever seen it elsewhere.

The species that showed the most marked difference in the seasons was *Lycaena alcon*. This insect was much more abundant than during the preceding year, when it was practically over at the time of our visit. This year the species, though more frequent, was localised almost beyond belief in a place where the foodplant was widely spread over many acres. Nearly all our captures were made in two little corners of the bog, although odd ones might be seen almost anywhere. The ♂s were in none too good condition, but the ♀s were much better and presented two very distinct forms, one tinged with blue on the base of all the wings, extending in some instances to the disc, the others uniform greyish-fuscous without blue.

A few other insects were noted—*Adkinia bipunctidactyla*, *Stenoptilia pterodactyla*, *Marasmarcha phaeodactyla*, *Merrifieldia tetradactyla*, *Crambus margaritellus*, *C. selasellus*, *Glyphipteryx cladiella*, &c. Searching the tree-trunks in the pinewood, soon showed that *Hyloicus pinastri* was there, wonderfully well-protected as it sits closely on a trunk during the daytime with the wings well-drawn down to the resting surface.

The poverty of the season was apparent rather in the almost absence of a large number of species seen the preceding year and in the fact that others did not appear at all, evidently not yet out, than in the actual number of specimens seen. The abundance of *Enodia hyperanthus*, *Coenonympha tiphon*, *Lycaena alcon* and *Anthrocera lonicerae* suggested that cold late seasons are not equally deleterious to all species. Of whites, *Gonepteryx rhamni*, &c., not a hundredth part of the specimens were on view compared with the preceding year, nor did there seem evidence that they would later be as abundant as in 1908. We made three journeys to the bogs and, on each occasion, although apparently working the same ground, made some observations that escaped us on the other visits, and it was not until the morning of our last visit that we discovered *Anthrocera lonicerae* at all. Entering the bog from another direction we scarcely saw a specimen of *A. trifolii*, but found as described *A. lonicerae* abundantly, whilst, on the two earlier occasions, we never got a specimen of the latter species, and, though *A. trifolii* ♂s were not uncommon, we got very few ♀s. Still, although insects were not so abundant as in the preceding year, there was none of that dearth we had almost been led to expect.

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### On the Variation of *Hydroecia crinanensis*, Burrows and Pierce.

By (Rev.) C. R. N. BURROWS, F.E.S.

It appears to be advisable while the material remains in my hands, to put on record the forms of this new species which have, so far, been identified by Mr. Pierce and myself. This material, consisting of only 47 specimens, is not sufficient, of course, for me to attempt so complete an examination of the aberrations, as Mr. Tutt drew up in his descriptions of the forms of *H. nictitans*, *H. paludis*, and *H. lucens* in his *British Noctuae and their Varieties*, vol. i., pp. 58-64, and later in the *Entomologist's Record*, vol. vii., pp. 78-79. On this account also it seems premature to embark upon a discussion of parallel-variation



with the other members of the group—to which *H. crinanensis* (so far as British species, and so far as appearance goes) belongs.

The first fact to notice is its extreme inclination to form local races. Of the sixteen original specimens, brought from the Crinan Canal locality by Messrs. Bacot and Simes in 1899—which survive, or have reached my hands, all are light. The three specimens from the Maddison Collection, labelled “Inveran,” are light. Mr. J. E. R. Allen’s single Bolton (Lancs.) and Enniskillen specimens are light. On the other hand, of the 23 specimens which Messrs. P. A. and D. A. J. Buxton captured at Liddlebank and neighbourhood in the autumn of 1909, only one or two are light, the rest dark, some almost melanic. Of the seven which Mr. Le Marchant captured at Aberfeldy in 1909, two are quite melanic, while the rest are light. With colour, goes size, the light specimens being appreciably larger than the dark.

There appears to be no particular relation between the localities and the variation in colour. The light form coming from the extreme north of Scotland and from the Crinan Canal, the dark from Aberfeldy, at a considerable elevation, and from the Liddlebank.

All these localities are, as far as I have been able to find out, in the neighbourhood of running waters, as opposed to the mosses and bogs of *H. lucens*, the salt-marshes of *H. paludis*, and the general habitats of *H. nictitans*. I have been unable to detect any trace of sexual variation. As to the type form of the insect, there exists the difficulty, that the species was named from its genitalia characters and not from the wing-colour or markings. Two specimens, given to me by Mr. Bacot, were the first detected. These two specimens, males, are unfortunately of different forms, so I suppose I shall be compelled to take the first examined as the type, and as such I describe it.

#### LIGHT FORMS.

- |  |                                       |
|--|---------------------------------------|
| 1. Pale yellowish-grey, yellow reniform stigmata                                     | =ab. <i>pallida-flavo</i> , n. ab.    |
| 2. Bright brick-red, with darker central area reniform and orbicular stigmata orange | =ab. <i>crinanensis</i> , B. and P.   |
| 3. Dull red, dull orange reniform stigmata   | =ab. <i>rufescens-flavo</i> , n. ab.  |
| 4. Dull red, white reniform stigmata   | =ab. <i>rufescens-albo</i> , n. ab.   |
| 5. Grey-red, yellow reniform stigmata (to which the second type specimen belongs)    | =ab. <i>grisescens-flavo</i> , n. ab. |
| 6. Grey-red, white reniform stigmata   | =ab. <i>grisescens-albo</i> , n. ab.  |

#### DARK FORMS.

- |  |                                      |
|--|--------------------------------------|
| 7. Dark chestnut-brown, yellow reniform stigmata | =ab. <i>castanea-flavo</i> , n. ab.  |
| 8. Dark chestnut-brown, white reniform stigmata  | =ab. <i>castanea-albo</i> , n. ab.   |
| 9. Red-black, white reniform stigmata            | =ab. <i>nigrescens-albo</i> , n. ab. |

The orbicular stigmata are rarely distinctly filled in with lighter colour. The dark central area appears throughout the pale forms.

The impossibility of distinguishing this species by the eye has been acknowledged by so many entomologists that the fact must be known by this time. There seems to be a general look about the insects, which differentiate it from *H. lucens*. The occurrence of the pale central line on the hindwing is not unusual, and is commoner than in *H. lucens*, *H. nictitans*, and *H. paludis*, in all of which it is, however, also found. But the dark specimens of *H. crinanensis* are much darker than any *H. lucens* or *H. paludis* I have ever seen, and, although *H. nictitans* occasionally occurs very dark, there is happily no difficulty in distinguishing between it and *H. crinanensis*.

# On the founding of nests by Ants; and a few notes on Myrmecophiles.

By HORACE DONISTHORPE, F.Z.S., F.E.S.

The early idea of how a colony of ants was started was that a solitary female ant, after her marriage flight, found a suitable spot, and laying her eggs, brought up the brood herself. This, of course, holds good with many species (*Lasius flavus* and *L. niger*, *Myrmica rubra*, etc.), but of late years much progress has been made in our knowledge of how some other species found their colonies, and the reason of our finding mixed nests of ants. Much patient research has been given to the subject by Wheeler, Wasmann, and others. I propose to deal briefly with a few of these points, having recently carried on some successful experiments which appear to help to confirm the new views.

It is quite clear that in the *Formica rufa* group (*F. rufa*, *F. pratensis*, *F. sanguinea*, *F. exsecta*) the queens have lost the power of founding colonies by themselves. They either do so by branch nests, by being accepted into a nest of their own species near at hand, or received back into their own, or by entering a nest of another species of ant belonging to the *F. fusca* group. In the latter event, the *F. rufa* ♀ enters a new, or weak, *F. fusca* nest, and, after more or less fighting with the *F. fusca* ♂s, is accepted by them, and her first brood is brought up with their help. It is exceedingly probable that she kills the *F. fusca* ♀, if present, as there is now evidence on this point. I determined to try and see if I could get a *F. rufa* ♀ accepted in one of my observation nests, and have been entirely successful, as the following notes will show.

I had some 40 ♂s of *F. rufibarbis* var. *fuscus-rufibarbis*, which Mr. Keys had sent me, last July, from Whitsand Bay, in a combined Fielde and Janet nest. These, on January 28th, I confined in the one compartment of the nest by blocking up the connection between the two with cotton wool. Into the empty compartment I put a ♀ *F. rufa* from a *rufa* nest I had in a glass bowl, and which I had brought from Nethy Bridge last May. I kept the ♀ by herself till February 1st, to allow her to somewhat get rid of her own nest aura, as she would do in nature. A ♀, after her marriage flight, would be wandering about for some days. She would also remain in the neighbourhood of the *F. fusca* nest she had found, and would work her way in by degrees. On February 1st, I removed the obstruction between the two compartments. Several ♂s entered her compartment, the ♀ seemed very restless, repeatedly entering their compartment and returning again; at first when she met ♂s they ran away, and she also seemed to hurry out of their way. On February 2nd she was attacked, but regained her own compartment, in which five ♂s had entered. I blocked up the connection for the night leaving her with these five. February 3rd she was again attacked, and she killed a very persistent ♂ after trying hard to conciliate it by much antennatapping and stroking. Later, another pulled her along by the antenna, the ♀ only tapped it with her other antenna, and finally it let go. Meanwhile, another ♂ climbed over and under the ♀ without attacking her. Later, the ♀ was fed by a ♂! At night the ♀ was sitting with two ♂s in a corner, quite friendly, and tapping antennæ together. I allowed more ♂s to enter. On February 4th I introduced another ♂,



the ♀ tapped it hard with her antennæ and stroked it briskly on both sides of the head with her front feet. February 6th the ♀ was attacked by a ♂, which eventually she killed. February 7th, as half the ♂s remained in the other partition of the nest, I put the ♀ and the ♂s with her into a small plaster nest with only one compartment, and gradually introduced the remaining ♂s. One of these persisted in attacking her, and, after fighting with it all day, both rolling over and over, she killed it in the evening. By February 9th I had introduced all the ♂s into this very small nest; they are now all quite friendly, and the ♀ sits on and among them in a corner. They clean her legs and body and feed her. To-day, February 24th, having given them some honey, at which nearly all the ♂s fed, the ♀ was afterwards fed by some of them. It is, therefore, quite clear that if this ♀ will lay eggs the larvæ will be brought up by these strange ♂s. It also confirms the fact that ♂s of the *F. fusca* group will accept a strange *F. rufa* ♀.

In the event of a *F. sanguinea* queen entering a strange *F. fusca* nest, she takes possession of the pupæ, fights with, drives away, or kills, the *F. fusca* ♂s, and, when the *F. fusca* pupæ hatch, they help her to bring up her brood. The mixed character of the nest is kept up by slave raids on other *F. fusca* nests. I carried out some experiments last year with *F. sanguinea* ♂s, and these I recorded in detail in a paper on "Experiments with Ants' nests," which I read before the Entomological Society of London on December 1st, 1909.

In the two experiments which were successful (i.e., in which the *F. sanguinea* ♀ was not killed), the ♀s killed all the *F. fusca* ♂s in the nests into which I introduced them, and took possession of the *F. fusca* cocoons, and sat on them in a corner of the nest. These two experiments also confirmed what had been recorded about *F. sanguinea*.

*Formica exsecta* appears to generally found its colonies, according to Wasmann, with *F. fusca*. The ♀ *F. exsecta* is smaller in comparison with her ♂s than is the case with the rest of the *F. rufa* group, and is of a darker colour, and would thus be more easily accepted by the *F. fusca* ♂s. Wheeler has also shown this to be the case with the *F. exsecta* race in America. Forel, however, has recorded that it also forms colonies by branch nests, where the species is numerous and many nests are found together. This was probably the case at Bournemouth, where I found many *F. exsecta* nests all together, but in the Isle of Wight, and at Aviemore in the Highlands, where I discovered this rare species, the former method was probably that used. At Parkhurst Forest the few nests were in the ground, and with very little nest materials built on them, suggestive of a recent *fusca* origin. At Aviemore, two nests close together were of the usual *exsecta* type, built up of grass and ling, but the third, which was a mile or two away, was partly under a large stone, a heap of the nest material being built up on one side. Under the stone were galleries such as are constructed by *F. fusca*.

*Lasius umbratus* is said sometimes to found its colony in a nest of *L. niger*. Mr. Crawley records that he had a ♀ *L. umbratus* accepted by a *L. niger* nest (*Ent. Mo. Mag.*, 1909, p. 94), which agrees with this view.

*Lasius fuliginosus*, which is often very numerous in a district in which it occurs, partly founds its colonies by branch nests. Wasmann has pointed out, however, that nests of *Lasius umbratus* are frequently

found at the foot of trees inhabited by *L. fuliginosus*, and he goes on to demonstrate that the ♀ *L. fuliginosus* has founded her colony in the *L. umbratus* nest. Crawley has recently recorded that he found ♂s of *L. umbratus* in company with *L. fuliginosus*.

In the *Ent. Record*, 1897, p. 246, I recorded that I found a large nest of *L. fuliginosus* in the hollow of a tree at Lymington, and that *Lasius flavus* was living with it, both species coming in and going out together. I am now convinced that the species was really *L. umbratus*, I was not so well acquainted with our ants at that time, and I remember distinctly thinking how large the *L. flavus* ♂s were. Dr. Joy has shown me a large nest of *L. umbratus* at Wellington College, in the heart of a district thickly populated with *L. fuliginosus* nests.

The following observations should have appeared in my Myrmecophilous notes for 1909:—

**PSEUDOSCORPIONINÆ.**—*Chernes scorpioides*, Herm.—In May last this species was found in the greatest profusion in *F. rufa* nests at Buddon Wood, Leicestershire. Mr. Wallace Kew, who kindly identified them for me, told me there were ♂s, ♀s, and ♀s carrying eggs externally, present. They occurred in the nests, literally in thousands, especially at the very bottom of the nest. Every handful of the *débris* of the nests placed on paper was seen to be swarming with the Chelifers. The ants paid no attention to them. It has been recorded with the same ant in Denmark by Hansen. I have taken it sparingly with *F. rufa* at Weybridge (*Ent. Rec.*, 1907, p. 255), and have introduced specimens into my observation-nests. The ants treated them with indifference. When a *F. rufa* ♀ was forced to take hold of a Chelifer, it dropped it at once. I think it is quite clear that this species, at least, cannot be said to have "nothing to do with ants." *Ideoneus cambridgii*, L. Koch.—Several specimens were found in nests of *L. flavus* at Virtuous Lady Mine, in Devonshire, in April. *Chthonius rayi*, L. Koch, occurred in a nest of *F. rufa* in Parkhurst Forest, Isle of Wight, in April. I have taken this common species before with *L. fuliginosus* at Oxshott.

**PROCTOTRYPIDÆ.**—*Paragryon myrmecophilus*, n. s.—My friend, Mr. F. Bouskell, and I found this little apterous species in a nest of *Lasius flavus* in Bradgate Park, Leicestershire, on May 3rd last. *Teleas myrmecobius*, n. s. ♂ and *Hoplogryon myrmecobius*, n. s. ♀.—I took these two specimens in a nest of *Lasius fuliginosus* at Darenth Wood on September 24th. Dr. Kieffer, who proposes these names for the three above new insects, tells me that he gives the same specific name to the last two because he believes that the genera *Hoplogryon* and *Teleas* are not distinct, and that these are possibly, therefore, ♂ and ♀ of the same species.

**ACARINA.**—*Uropitella minutissima*, Berl., occurred in nests of *Lasius niger* at Box Hill in May. *Urotachytes formicarius*, Lubb., with *L. flavus* at Sandown, Isle of Wight, in April. *Trachyuropoda coccinea* var. *sinuata*, Berl., with *L. niger* at Cothill, near Oxford, in June. Mr. N. D. F. Pearce tells me he considers this to be the same species as *T. excavata*, Wasm. *Laelaps laevis*, Mich. ?—I took this specimen with *F. exsecta* at Aviemore in May. Mr. Pearce writes that it is very large, 1200μ, and the hairs seem too pronounced for *L. laevis*. It is probably new. *Laelaps oophilus*, Wasm.—I took a ♀ *Formica rufibarbis* var. *fusco-rufibarbis* at Sandown, Isle of Wight, on April 24th last, with a number of this little mite on her body. As this little species lives amongst the



egg-masses of the ants, they would leave the ♀ after the eggs were laid. Later in the year, when all the eggs would have hatched, Mr. Keys sent me specimens from Devonshire, taken loose in the nest of *F. rufa*.

Mr. Pearce considers two mites I took in nests of *Tetramorium caespitum* at Whitsand Bay, in April, 1907, to be *Laelaps myrmophilus*, Mich. It has not been recorded from Britain before.

### A phylogenetic sketch of the Pyrameid group of Vanessids

(with plate).

By T. REUSS.

(Concluded from p. 67).

Turning now to the *atalanta*-form group of species two of which have been mentioned already in connection with the *cardui*-form species, one finds that all these forms, while exhibiting great disparity in size, may be characterised facially as follows: *Upperside* ground colour black or brown-black, often showing a bronze gloss, with bands of red or reddish-orange, crimson, orange or yellowish; and with the apex of forewings blotched with white. As will be seen, this description could be applied also to *P. atalanta* and its aberrations alone. The *undersides* are generally like those of *atalanta* and *indica* (fig. 17), but often show less detail, and are more plain in their colouring, as is, however, often the case also in aberrations of *P. atalanta*. Sometimes the blue marking beyond the red band of the forewing is ring-shaped, as in the large *P. itea*, F., of Australia, with creamy-yellow bands, and *P. gonerilla*, F., of New Zealand; also a large species, with red or crimson bands; another time the blue appears as a narrow brilliant streak crossed by the veins of the wings, so in *P. tammeamea*, Esch., a giant form from the Sandwich Islands, with fiery orange bands shaped as in *P. indica*, while otherwise the blue marking is intermediate in different ways between the ring and the streak, as in *P. atalanta*, *P. indica*, and in *P. dejeani*, Godt., from the mountains of Java, the latter very much resembling *P. atalanta* in size and character of markings, but in the ground colour *P. dejeani* is lighter bronze, and the bands are dull yellow in colour. In *all* the species mentioned, including the *Araschnids*, the curious markings that look like the number 980 in the hindwing of *P. atalanta*, (pl. i., fig. 18) are more or less plainly indicated.

According to the shape and position of the red or yellow colour-bands, the six species divide into three pairs: (1) *atalanta*, *dejeani*, (2) *indica*, *tammeamea*, (3) *itea*, *gonerilla*. The two latter species from Australia—New Zealand differ from the others in the colour-bands of the upperside of the hindwings, which are placed and ocellated much as in the well-known British *Erebia aethiops* or *E. epiphron*. The white-centred and white-ringed ocelli show up where in *atalanta* and *indica* only a row of dark patches follows the inner margin of the red band (fig. 13), but, in *Pyrameis atalanta* ab. *merrifieldi*, these patches are blue-centred and blue-ringed. On the forewings of *itea* and *gonerilla* the bright bands are much shorter and broader than in *atalanta*, and form large blotches of colour. The ground colour in the yellow-marked *itea* is bronze-brown; in the crimson-banded *gonerilla* it is black. Except for the blue ring on the forewing, the underside facies in both species is some-

what like the underside of *P. atalanta*. *P. indica* and the gigantic *P. tammeamea* differ from *P. atalanta* chiefly by exhibiting broader and more angular bands of fiery orange, a patch of which colour extends in the central area towards the inner margin of the forewings. The orange band on the hindwings of *P. tammeamea* consists of very large separate patches of brilliant colour with very small marginal dots. The undersides are again very similar in general appearance, and *P. indica* suggests by its underside that it is the most atavistic of the whole group. Lastly, *P. dejeani* looks like a pale form of *P. atalanta*: the ground colour is light bronze, the bands are dull yellow, the otherwise blue markings on the underside of the forewings are greyish (*cardui*-form). The white apical spots are smallest in *P. indica* and *P. tammeamea*, in which species they are also yellowish in colour. As these comparative descriptions point out, the two Australian species own facial markings of a very distinct character. I do not think that any of these foreign species have as yet been experimented upon, no doubt the difficulties in obtaining ova and larvae have been too great so far. Of *P. atalanta*, however, many aberrations have been bred, most of which, if rarely, occur in the field, while others, for instance the beautiful ab. *merrifieldi*, Stdfss., which was bred first in 1892 by Mr. Merrifield, and a year later by Professor Standfuss (who at the time was ignorant of Mr. Merrifield's experiments), have never been seen in the wild state. This latter point is explained in the case of ab. *merrifieldi*, which is a low temperature form, by the fact that *P. atalanta*, like *P. cardui*, and for the same reason, could not establish itself as yet in the north, so that low temperature forms have had no chance of development in nature. *P. atalanta* ab. *merrifieldi* is a very beautiful form, blue-black in colour, with crimson bands, much broken up by black in the forewings, very large white apical blotch (of a shape like the orange one in *P. carye*), and much whitish suffusion between this apical spot and the crimson band. The black spots (corresponding with the lunules of *Vanessa urticae*) in the crimson band of the hindwings are broadened out and centred with blue (or yellowish), and also the median row of otherwise dark spots are blue (or yellowish) centred and blue-ringed, but only on the basal side, while the blue centres still touch the red band. In good specimens all the blue markings of the forewings have already changed to white or greyish, and, doubtless, also the blue-marked half-formed ocelli of the hindwings would, if they were fully developed under natural conditions, become white-centred and white-ringed, in which case they would draw the red markings round them, exactly as is seen in *P. gonerilla*, which also has been described as a crimson and black white-blotched form. It is, therefore, possible, with the help of ab. *merrifieldi*, to understand the facial development of *P. gonerilla* of New Zealand in connection with that of *P. atalanta*. I do not, however, wish to suggest that *P. gonerilla* had necessarily once looked just like *P. atalanta*. I think it is more likely that the peculiar conditions of climate and surroundings in Australia and New Zealand influenced the prototype in such a manner as to lead to the immediate development of the markings characteristic of *P. gonerilla*. If the facies of the prototype be near that of fig. 14, such a process of development could easily be pictured, for, in other aberrations somewhat similar to the one figured, the marginal spots of the hindwing coalesce and leave no trace of orange in the outermost margin, while, on the other



hand, the orange parts of the inner half of the marginal band and of the wavy median line spread and meet along the veins, thus isolating a row of black patches, which correspond in position with those in fig. 13, or with the ocelli described in *P. gonerilla*. Indeed, if the aberration of *Araschnia levana* be held against the light, each one of these black patches will be seen to have a transparent white spot in its centre, due to a full row of correlated violet-white spots on the underside of the wings, the (abnormal) development of which appears to depend on that of the said black spots on the upperside, which thus plainly betray the ocelliform tendency leading up to the markings in *P. gonerilla*. The Siberian *Araschnia burejana* and *dauidis* exhibit these markings in normal specimens. But for its large size *burejana* would be the model form of a "cross" between *levana* and *prorsa*. Such aberrations of the well-known *A. levana-prorsa*, as those described, are by no means rare. Anyone desirous may breed a few of these interesting forms simply by keeping his pupæ of the summer form *prorsa* in a dark box, which must be placed in a cool room. Professor Standfuss' father already, in 1852, bred two examples of *A. levana* ab. *porima* by keeping the pupæ in a cellar for a time. A few of the pupæ, kept in the way suggested, will then even hibernate and produce the type, *A. levana*, or some interesting phylogenetic aberrations, in the spring following. On February 6th, I bred from a pupa of the latter kind, after eight days of + 16°C. to 25°C. and seven nights of 8°C. to 15°C., an aberration (♂) that exhibited large confluent blue lunules in an otherwise, in many details, *urticae*-form upperside, while the *levana* underside could be described as being of the Pyrameid kind, most resembling *P. indica* and *P. myrinna*, especially in the hindwings, while the forewings showed something of the bone-white ground colour found in *V. urticae*. These harmoniously coloured, strigated, undersides of *levana-prorsa*, and of the tropical Pyrameids, are evidently primitive in their composition, while the dusky undersides of Vanessid species, like *urticae*, *io*, *polychloros*, etc., have developed in adaption to special habit. It may be noted that all the species of the latter category with very dark undersides have acquired the habit of hibernating in the imago state, which fact—considering the conditions under which hibernation takes place—may well account for the suppression of colour-development in their undersides. Though my *levana* aberration was bred from among summer pupae (which Mr. Merrifield had kindly sent to me), it was far smaller than any of the ♂ *prorsa* that had emerged in August, six months before, though the pupa itself showed no visible difference in size from the others. In this connection I would like to remind that extreme heat can produce the same physiological, not only the same facial, results as cold. In *Exp. Zool. Stud.*, p. 19, Professor Standfuss records that (fresh) pupæ of *A. levana* var. *prorsa*, if exposed to high temperatures, behave in a way which I find is quite similar to that I have suggested above, and, moreover, Professor Standfuss figures on pl. iv., fig. 11, an aberration as typical of the case in question, which only, in the hindwings, is nearer to *prorsa* than my fig. 14, but otherwise resembles it closely, and is also a ♀ specimen. Of *P. atalanta* aberrations, which, I think, might be, or have already been, captured in the field, and which are also of phylogenetic interest, I bred several during the two last seasons. The first one, bred from among wild

continental larvæ, emerged on July 30th, 1908, and reminded one strikingly of *P. dejeani* (of Java) by exhibiting creamy-yellow (somewhat browned) bands and a remarkably colourless yellowish underside with pale greyish-violet (instead of blue) markings on the forewings. The specimen differed from *dejeani*, however, in the ground colour of the upperside, which was brown-black, with a reddish flush instead of light bronze, but, as is well-known, normal examples of *P. atalanta* often exhibit a ground colour of shining bronze, so that the detail is evidently also inherent in the species. A week later, two aberrations bred from wild Herts larvæ, emerged on August 7th, one of which was transitory to *P. indica* in the facies of the underside forewings, the blue markings being especially well-developed in this sense. Doubtless also these blue *indica*-form markings are very near to those in *P. tammeamea*. The other aberration, a progressive form, appeared unlike any existing species by exhibiting on a deep black ground colour beautiful rose-coloured bands, shaded with white near the costa of the forewings, and interrupted by black in the median part. The blotches in the apex of the forewings are pure white, and whitish scales seem mixed up with the black ones in the ground colour, making the specimen look abnormally transparent when held against the light, in which case, also, the rose bands appear almost mauve-coloured. Near the inner margin, and close to the bright band, there is a whitish blotch or suffusion, and this is a detail which often occurred in other aberrations of *P. atalanta* which I bred. On the hindwings, one of the median ocelli is centred with white on the upperside, reminding one of ab. *merrifieldi*, but these whitish spots occur also in ab. *klémensiewiczii*, Schille. I suggest the descriptive name ab. *rosea* for this aberration, which made a beautiful and uncommon spectacle when flying. Several specimens that emerged later exhibited brilliant scarlet bands, which on the hindwings were nearly 6mm. broad, and had only very small black dots close to the margin, reminding one of the parallel development in *P. tammeamea*. Other specimens had orange-yellow bands, and the apical spots tended to bluish-violet. An aberration of this (progressive) class with pure lilac-coloured apical spots, but normal underside, is in the British Museum coll. In two otherwise almost typical specimens the shape of the blue markings in the underside forewings suggested a "ring," as in *P. itea* and *P. gonerilla*, and, in a third specimen, the blue formed a compact patch. Two specimens had fewer white spots in the apex, and showed a red spot on the underside near the inner margin and in the central area of the forewings, thus approaching the markings of *P. indica* in these respects, and a few also showed well-known rusty-red markings between the white apical blotches. On August 19th last, I reared from among Lancashire larvæ an aberration which was sun-bred, and emerged twenty days after pupation. The upperside exhibited a deep black ground colour with rich brown-orange narrow bands. The bands on the hindwings were abbreviated, showing only three instead of four (or five) black spots, of which the one next the anal angle is blue centred, while the third is wedge-shaped, and nearly touches the black ground colour. The underside of the hindwings was of an exceptionally dark brown colour, much suffused at the base with violet, and violet-white spots mark the centres of the median ocelli (an atavism!) which were partially disintegrated. The forewings (underside) showed



a conspicuous ring-shaped blue marking, while the red parts spread out towards the inner margin, somewhat as in ab. *klemensiewiczii*. The basal part of the wing, adjoining the red, was violet.

On plate i., figs. 15, 16, the upper- and underside forewing of an extreme form of ab. *klemensiewiczii* is figured. Besides the large symptomatic patches of red, blue, and white (fig. 16), which look as though an artist had drawn them in the secessionistic style, with one straight dash of the brush, it is interesting to note, in fig. 15, the unmasking of the three costal blotches, which seem to underlie the facial patterns of all the Vanessids. As is well-known, these costal markings are most conspicuous in *V. urticae*, in which species they are usually very equally and fully developed, but it is the primitively marked *Polygonia c-album* (and the local forms resembling it) which, I think, still pictures the evolution of these black markings from the original brownish-yellow colour. The costal spots of *P. c-album* are perhaps mostly described as black, and, no doubt, they are nearly black in the darkest forms, characterised by very dark moss-green speckled undersides, but in other lighter forms of the species only the first (basal) and second costal spots have black in them, the markings are chiefly dark tawny red in hue, and the apical blotch is, indeed, either wholly of that colour, or only its costal rim is black. Very often the black disappears out of all three spots, but, if present in part, it is then strongest in the first basal blotch, while the second blotch has only a streak of black on its basal side. In darker specimens the second blotch will be seen to consist of two separate lines of black—which stage of development is also plainly exhibited by *A. levana*, *A. burejana*, by the primitive *Pyrameis carye*, fig. 2, and, in a lesser degree, by all the species of the *cardui*-form group. In the darkest forms of *P. c-album*, then, the interstice between the two lines is filled up with black, and the costal blotch at last appears as in *V. urticae*. But the undersides of both *P. c-album* and *V. urticae* still exhibit the three distinct parts that have joined up in the black upperside blotch, and in the undersides of the Pyrameids the, in itself, very variable middle part of this costal blotch is outlined by grey (*cardui*-form) or blue (*atalanta*-form), thus causing the well-known beautiful markings. In aberrations of both *P. c-album* and *V. urticae* the apex occasionally tends to become as black as in a Pyrameid. In light-coloured specimens of *Polygonia egea*, it may, on the other hand, be noticed that only the first basal spot and the basal half of the second costal spot have developed at all, and that the apical blotch is almost obsolete.

This facial development is also pictured by the successive stages by which the pigmentation of the wings takes place in the pupal state. When, for instance, the wings of the strongly blotched *V. urticae* are taken from the pupa during the suitable stages of development, it is seen that the pigmentation of the black costal blotches does not begin till the red pigment of the ground colour has diffused into the wing, leaving the parts that are to become black and the margin bare (the yellow costal spots begin red, like the ground colour), and that then first the basal blotch turns black, while the apical one is left without pigment to the last. The blue lunules, however, appear already in this stage. After the development of the red in the upperside, the underside markings are laid out in a beautiful golden-brown colour, reminding one of *A. levana* and *burejana*, especially as the

brown is crossed by the still whitish veins, which will receive their pigmentation last. In *A. levana* these veins are still transparent. The median and inner marginal spots also blacken in the pupa before the apical blotch, which is just what *P. c-album* and *P. egea* picture in the perfect state, besides showing how black markings are gradually evolved out of the orange ground colour. Similar evidence of the gradual development of wing-markings is, however, still more strikingly supplied by *Araschnia levana* and its different aberrations, the latter, for instance, beautifully illustrating the development or the masking of the white bands of *A. prorsa*, the process evidently being conducted in the same way as is suggested in the Pyrameids—*Pyrameis carye*, *P. virginienis*, and *P. myrinna*, figs. 10, 11, 12. Though it does not appear as yet to have been possible to cause specimens of *P. atalanta* to revert to the primitive light upperside, yet the species is well linked with *P. indica* by aberration (and by its life-history), and this latter more primitive form shows comparatively strong transitory details to the orange ground colour of *P. cardui*, or of that phylogenetic mirror, *A. levana*.

## EXPLANATION OF PLATE I.

## VANESSIDS:

- Figs. 1, 5, 9.—PYRAMEIS CARDUI, L., ♀.  
 Figs. 2, 6, 10.—PYRAMEIS CARYE, Hb., ♀.  
 Figs. 3, 7, 11.—PYRAMEIS VIRGINIENSIS, Duf., ♀.  
 Figs. 4, 8, 12.—PYRAMEIS MYRINNA, Doubl., ♂.  
 Figs. 13, 17.—PYRAMEIS INDICA, Herbst, ♂.  
 Fig. 14.—ARASCHNIA LEVANA, L. ab. ♀.  
 Fig. 18.—PYRAMEIS ATALANTA, L., ♂.  
 Figs. 15, 16.—PYRAMEIS ATALANTA ab. KLEMENSIEWICZI, Schille, ♀.  
 Fig. 19.—PYRAMEIS CARDUI ab. WISKOTTI, Stdfss., ♀.  
 Fig. 20.—VANESSA URTICÆ, L., ♀.

## LYCENIDS:

- Figs. 21, 22.—CUPIDO MINIMUS (greenish ♂ and normal ♀).  
 Figs. 23, 24, 25, 26.—POLYOMMATUS ICARUS (two brown and two blue ♀s, the latter exhibiting only very slight traces of red in the margins; for text, see vol. xxi., pts. 9 and 10).

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### On the Conjugation of Lepidoptera.

By (Rev.) C. R. N. BURROWS, F.E.S.

Dr. Chapman's interesting note and plate in your last number encourage me to carry the subject of the transference of the cornuti between the sexes of lepidoptera a little further. In examining the males of the Noctuids neither Mr. Pierce nor I noticed a trace of this. In fact, I satisfied myself that the cornuti in this group are generally so firmly attached to the vesica that they have to be torn away, carrying with them a portion of the epidermis of the vesica. It is to be regretted that we did not examine the females, as we might perhaps have found some species in which the transference occurs. But I have traced it in other groups. A pair of *Gnophos obscurata*, taken in cop. by Mr. Prout, and intended to be forwarded to me in that position, separated on death. No force was applied, as the object Mr. Prout had before him was definite. On preparing their bodies I found the cornuti within the bursa of the female. In the Tortricids the occurrence seems likely to be more frequent, as I have, with very little opportunity for investi-



gation, already detected it in *Ephippiphora foeneella* and *Paedisca solandriana*, out of the four species which I have so far mounted. It is, of course, useless to search for evidence with bred or unpaired specimens, hence the difficulty I have found in getting a mount of the female of *Peridea trepida* to compare with Dr. Chapman's. It was Mr. Pierce who called my attention to the stellate cornuti in the latter species. I passed the information on to Dr. Chapman. I may add that I have found males of one and the same species with the whole complement of cornuti, proved by the absence of "scars," and also with the whole of the "cornuti" disposed of.

### Some Butterflies of the Black Forest and Rhine Plain.

By B. C. S. WARREN, F.E.S.

It is strange how few notes or records of entomological excursions in the above localities are published. During the five years of my collecting there, I only met one English entomologist. For such an easily got-at place, so close to Switzerland, where every year the number of English entomologists is steadily increasing, this is most surprising. Perhaps it is partly due to the thought, as Mr. G. L. Keynes says in his article on this locality (*Ent. Rec.*, vol. xix., p. 88), that "The Black Forest is composed almost entirely of beech trees and gloomy pines, which have little attraction for butterflies." This is hardly correct, for, even in clearings in the depth of the forest, butterflies are often common, and, at higher altitudes, on the upland moors and grassy hillsides they often abound, in as great numbers, and as large a variety of species, as in many of the more celebrated localities of Switzerland. In Mr. Keynes' case, it may partly be accounted for by the fact that, as he says in the end of his article, he "never went more than ten miles from Lahr." Freiburg, where I was living, is an ideal centre for an entomologist, situated as it is on the spot where the sun-baked Rhine plain joins the pine-clad slopes of the Black Forest. The principal localities round Freiburg are: to the west, Alt-Breisach, on the banks of the Rhine; a small hill-district of volcanic origin known as the Kaiserstuhl; and a wooded-district between the Kaiserstuhl and Freiburg called the Moos Wald. To the south-east, through the Höllental, one gets to Hinterzarten, a little village 2900 feet up, on the edge of a turf moor and bog (one of the most interesting spots imaginable for entomologists) and two miles further to the lake of Titisee, from which the Bärenthal stretches up to the lower slopes of the Feldberg, the highest mountain in the Black Forest.

The following are the most interesting species found in this district:—*Thymelicus acteon*: Rare at Alt-Breisach. *Cyclopides palae-mon*, from May 10th, at the Moos Wald, also on the Kaiserstuhl, but scarcer there. *Heodes virgaureae*: This species is found at Hinterzarten, and may be had for a few miles down the Höllental, but is never very common. *Chrysophanus dispar* var. *rutilus*: I have taken one specimen, a ♀, at Wasenweiler, a little village  $4\frac{1}{2}$  miles from the Rhine, but have never met with it on the banks of the Rhine, though formerly local collectors recorded it from Alt-Breisach. It is always very scarce. *C. hippothoë*, is common by June 15th, at Hinterzarten, though the ♀s are often still to be had in the middle of July. *Loweia dorilis* is common throughout the whole district from May to September. *Lycaena*

areas: Very local, occurring a few miles to the north of Alt-Breisach in late July and August. *L. euphemus*, rare in the same locality. *Glaucopsyche cyllarus*: Widely scattered over the mountainous part of the district, always rare. *Hirsutina damon*: Kaiserstuhl, rare. *Vacciniina optilete*: In July, at Hinterzarten, fairly common, generally getting over by the 15th. *Everes argiades* is very common in August at Alt-Breisach. *Chattendenia w-album*: Always very rare, have only taken one specimen. *Nordmannia ilicis*: Appears to be scarce, though widely distributed, while *Klugia spini*, though very local on the Kaiserstuhl, is fairly common. *Strymon pruni* is local in the Moos Wald in early June. It has never been seen there later than June 29th. *Iphiclides podalirius*: This magnificent species is common in both broods throughout the mountainous parts of the district. In the spring brood on the Kaiserstuhl, a transitional form to *ab. zandaeus* is not uncommon. *Parnassius apollo* is often abundant in the neighbourhood of Hinterzarten, *ab. nevadensis* occurring occasionally. *Pontia daplidice* is common at Alt-Breisach and also, sometimes, on the Kaiserstuhl, but I have never seen it on the wing before August 1st. *Colias palaeno* var. *europome*: This beautiful species, specimens of which often measure 62mm. across the wings, is very common at Hinterzarten during the first three weeks of July. On July 19th, 1907 a yellow ♀ of this var. corresponding with the *ab. herrichi* of the type was taken by myself. *Dryas paphia* is very common everywhere up to 2500 ft. I once took a beautiful *ab.* of the ♂. The double row of black spots round the outer margins of both fore- and hindwings, being absent, leaving a broad orange band. A local collector told me he had seen a similar specimen, but had not taken it as it was very worn. Mine was quite fresh, being taken early in July. *Issoria lathonia*: Common on the Kaiserstuhl, and found throughout the district. *Brenthis selene* is very common and of large size at the Moos Wald in the spring brood, also in July at Hinterzarten, where a transitional form to *ab. rinaldus* occurs. In this the silvery spots of the central band (underside hindwing) are lengthened into streaks, joining the basal ones, the marginal row remaining normal. Although this form is never common, a few specimens of it are taken every year. *B. pales* var. *arsilache*: This var. is common at Hinterzarten in late July, Mr. Wheeler, to whom some specimens of it were sent, tells me it is much smaller than Swiss *arsilache*. Mr. Tutt notes with surprise (*Ent. Rec.*, vol. xix., p. 269) that he found *B. pales* and *B. selene* on the same ground, and that he also captured *Vacciniina optilete* with them, a species never taken by him before at a lower elevation than 5000-5500 ft. Hinterzarten is a similar case, where all three occur together at 2900 ft. *Melitaea maturna* occurs abundantly (though very locally) in the Moos Wald, its usual time of appearance being the second week in June, but in 1907 I took a ♂ on May 27th. This is of course very unusually early. *M. athalia* is found throughout the district, specimens from the Moos Wald in June are often very large, 44mm. *Araschnia levana* is found on the Moos Wald, generally appearing about May 25th, but is never common, though the var. *prorsa* is one of the commonest butterflies there in late July. *Limenitis populi* and *ab. tremulae* usually occur in the Moos Wald in numbers, though some years they are scarcer. *Apatura iris* and *A. ilia* and var. *clytie* are exceedingly common in the Moos Wald, the ♂s may be seen



in hundreds, generally flying up to about 1 p.m. The ♀s are often seen between 12 and 1 p.m. as well as later in the day. These magnificent species are more abundant here, even than at Éclépens, but *ab. iole* has never been recorded. *Pararge aethina*: This species is locally abundant in the Moos Wald. *Hipparchia arethusa* is found in numbers at Alt-Breisach from the second week in August, *ab. obsoleta* occurring occasionally, though intermediate forms are very common. *Coenonympha hero*: This species usually appears between May 25th and 30th in the Moos Wald, and, though very local, is much commoner than it is supposed to be, for, by beating about in the undergrowth in the neighbourhood of its haunts, one finds it in much greater numbers than in the clearings. A curious fact about this butterfly is the short time its season lasts. In 1906 the first specimen seen was on May 29th, and on June 8th, when the spot was visited by Mr. Lowe and myself, it was very worn and practically over. This is perhaps an exceptionally short time, but I have never seen it later than June 12th. *Erebia stygine*: Common at Hinterzarten though local. On July 14th, 1905, I took a ♂ in which the white wedge on the underside of the right hindwing is showing through on the upperside.

The following is a list of the species taken by myself between the Feldberg in the west and the Rhine in the east, a distance of less than 40 miles:—*Erynnis alceae*, *Hesperia malvae*, *Powellia sao*, *Nisoniades tages*, *Agriades sylvanus*, *Urbicula comma* and *ab. catena*, *Thymelicus acteon*, *Adopaea lineola*, *A. flava*, *Cyclopterus palaemon*, *Heodes virgaureae*, *Chrysophanus* var. *rutilus*, *C. hippothoe*, *Loweia dorilis*, *Rumicia phlaeas*, *Lycæna arcas*, *L. euphemus*, *L. arion*, *Cupido minimus*, *Cyaniris semiargus*, *Glaucopsyche cyllarus*, *Hirsutina damon*, *Polyommatus hylas*, *P. icarus*, *Agriades coridon*, *A. thetis*, *Aricia astrarche*, *Vacciniina optilete*, *Plebeius argus*, *P. argyrognomon*, *Everes argiades*, *Celastrina argiolus*, *Callophrys rubi*, *Bithys quercus*, *Ruralis betulae*, *Chattendenia w-album*, *Nordmannia ilicis*, *Klugia spini*, *Strymon pruni*, *Nemeobius lucina*, *Iphiclides podalirius*, *Papilio machaon*, *Farnassius apollo*, *Aporia crataegi*, *Pieris brassicae*, *P. rapae*, *P. napi*, *Pontia daplidice*, *Euchloë cardamines*, *Leptosia sinapis*, *Colias palaeno* var. *europome*, *C. hyale*, *C. edusa*, *Gonepteryx rhamni*, *Dryas paphia*, *Argynnis aglaia*, *A. adippe*, *A. niobe*, *Issoria lathonia*, *Brenthis euphrosyne*, *B. selene*, *B. ino*, *B. dia*, *B. pales* var. *arsilache*, *Melitaea maturna*, *M. aurinia*, *M. cinxia*, *M. didyma*, *M. parthenis*, *M. athalia*, *M. dictynna*, *Araschnia levana* and var. *prorsa*, *Pyrameis cardui*, *P. atalanta*, *Euvanessa antiopa*, *Vanessa io*, *Aglais urticae*, *Eugonia polychloros*, *Polygonia c-album*, *Limenitis populi* and *ab. tremulae*, *L. sibylla*, *Apatura iris*, *A. ilia* and *ab. clytie*, *Pararge maera*, *P. megera*, *P. egeria* var. *egerides*, *P. aethina*, *Satyrus hermione*, *Enodia dryas*, *Hipparchia semele*, *H. arethusa* and *ab. obsoleta*, *Epinephele jurtina*, *E. tithonus*, *Enodia hyperanthus*, *Coenonympha hero*, *C. arcania*, *C. pamphilus*, *C. tiphon*, *Erebia medusa*, *E. stygine*, *E. ligea*, *E. aethiops*, *Melanargia galatea*. To these may be added *Coenonympha iphis*, which was taken by Mr. Wheeler at Hinterzarten. This brings the total number of species up to 104.

#### Sale of the remaining portion of the Collection of Lepidoptera made by the late J. A. Clark.

The remaining portion of the collection of British lepidoptera formed by the late J. A. Clark, was sold at Stevens' sale rooms on

February 22nd and 23rd, 1910. The Geometrids were first offered, and of these some of the *Abraaxas grossulariata* produced good prices. On the other hand, the dark Aberdeen specimens hardly fetched 1d. apiece. The ab. *flavofasciata* produced 8s., but an ab. *albomarginata* (York, July 10th, 1907) fetched £3 5s. whilst a specimen tinged with brown, and one with the basal two-thirds of forewings black, produced £1 4s.; an aberration broadly bordered with black went for £2 2s., another with basal half of forewings black, hindwings with a band of V-shaped spots, £2 2s.; one with disc of forewings orange and curiously blotched with black, £1 1s.; another example with broad black markings, £2; and fine ab. *varleyata* 12s. and 10s. each, etc., were the chief individual prices. The of late years over-looked *Phibalapteryx polygrammata* produced 16s., £1 6s., £1 5s., 16s., £1 2s., for sets of six, according to condition, whilst single specimens of the immigrant *Sterrhia saccharia* produced 15s., 10s., 7s., 5s., and 7s. per specimen. A fine melanic ab. of *Ligdia adustata* (Bexley, March 25th, 1903), fetched £3 3s.; two quite white *Emmelesia albulata* brought lot 101 up to 17s.; and four aberrations, including a large unicolorous brown *Campptogramma bilineata* lot 116 up to £1 2s. More *Phibalapteryx polygrammata* (labelled Cambs, 1872) produced 18s., and 12s. for 5 each; whilst *Cidaria reticulata* sold for £1, £1 18s., 18s., 11s., 11s., for 2; a fine *Eubolia bipunctaria* with outer half of wings and band near base of forewings black, went up to 5 guineas; and a specimen of *Odezia atrata* with margin and fringes white, £1 1s. *Madopa salicalis* (a series of nine) ran lot 134 up to £1 5s., not much for so long a series of this rare British species. Two examples of *Diasemia ramburialis*, one labelled (Folkestone, October 12th, 1878) and the other "Burney coll.," went for 12s., whilst there was another "Lines, 1873," in lot 158. We would like to know something beyond what is published about this as a British species. Then there were two *Ebulea catalaunalis* (one from "Meek") and one *Margarodes unionalis* (Gravesend, 1870), the latter, of course, a well-known immigrant species, brought lot 163 up to 11s. whilst eight *Lemnoides pulveralis*, brought lot 164 to 13s.; and three more *Margarodes unionalis* lot 165, to 12s. Three *Crambus verellus* (two Hodgkinson's sale) raised lot 168 to £1 1s., and eight *Crambus contaminellus* brought lot 170 to 17s. One would like to know something also about the four *Crambus rorellus* from the "Burney coll.," which brought lots 172 and 173 up to £1 2s. and £1 4s. respectively, whilst the four *Crambus rorellus* in lot 184 went for 7s. One supposes somewhere in England this species is nearly as abundant as "gooseberry moths." An excellent feature of the sale were the prices brought by the Phycitids, which from lot 174 to lot 183 produced per lot £1 12s. 6d., £1 2s., £1 6s., £1 8s., 11s., 11s., £1 12s. 6d., £1, 6s., and £1 respectively. Four *Ditula woodiana* produced £1 10s.; two *Penthina grevillana*, £1 4s. on two occasions; whilst *Spilonota pauperana* and *H. simplanata* raised lot 204 to 16s.; and three *Penthina fuligana*, lot 206, to £1 2s.; similarly, *P. postrema*, eight and five, caused lots 207 and 208 to go up to £1 12s. 6d. and 15s. respectively; and a single *Tortrix pronubana* (Bognor, October, 1908) produced £1 12s. 6d.; whilst *Stigmonota leguminana*, *S. cognatana*, and *S. trauiana*, were responsible for lots 226-228 reaching £1 2s., £1 10s. and £1 7s. respectively; fifteen *Eupocilia flaviciliana* for lot 237 producing £1 5s.; and *E. manniana*,



lot 238, 14s.; four *Argyrolepis schreibersiana*, lot 241, £1 1s.; although *Lozopera beatricella*, twelve and seven, did not raise lots 242 and 244 above 10s. each.

The Psychids produced very fair prices—14s., £1 6s., 5s., 7s., 13s., 9s., 12s., and £1 2s. per lot, whilst the Tineids (*sens. restr.*) in some instances were also satisfactory. Among the Gelechiids, *Gelechia gibbosella*, *G. semidecandriella*, *G. knaggsiella*, *G. hübneri*, and *G. juncella*, brought up their lots to 10s., 14s., 18s., 11s., £2, and 10s. respectively. When will some of our young collectors rediscover some of these latter, now almost lost, species in Britain? The Butalids and Glyphipterygids produced £2 17s. 6d., £2 2s., £1 4s., £1 12s. 6d., and 18s., 6s., and 5s. per lot, the sale on the 22nd producing altogether about £216.

On February 23rd the first species offered was the series of *Peronea cristana*, on which was based the *Monograph* of the species published in the *Ent. Record*, vol. xiii, together with the types of the new aberrations there described and figured. The whole series produced £40 14s., some of the examples commanding excellent prices, thus, single examples of *tolana*, 10s. each; *curtisana*, £2; *masoniana*, £1 1s.; *charlottana*, £3 and £3 5s.; *gumpiana*, £1 1s., £2 2s.; near *tolana*, £2, and so on. The series of *P. hastiana*, fetched £5 18s. 6d. We had intended working these out with the late J. A. Clark, as we had done *P. cristana*, but like so many human intentions it never came off. We observe, however, that the whole series was bought by Doncaster, we hope for one person, who will monograph them similarly to *P. cristana* some day. The rest of the Microlepidoptera produced, on the whole, high prices, particularly the Nepticulids, which went, in consecutive lots, for £1 8s., £2 10s., £2, £1 12s. 6d., £2 5s., £2 10., 14s., 14s., £1 1s., £1 7s. 6d., £1 6s., and £2. The Alucitids one might have supposed would have sold for more. They only brought 7s., 12s., 6s., 7s., 7s., £1, and 10s. per lot.

These were followed by a great number of valuable insects that had never been amalgamated with the collection. Among others, *Chrysophanus dispar* ♂, £3 15s., ♀, £4 10s., £3 15s., £2 2s., ♂ (Grigg coll.), 18s., ♂ underside (without antennæ), £2 5s.

It is well known that Clark was very interested in Australian and exotic insects generally, and some fine examples were brought under the hammer. These were sold in large lots, and, in many cases, small cabinets full of Hymenoptera or Diptera, etc., without dividing them into lots. The second day's sale produced roughly £189. Altogether the collection and the cabinets in which they were contained produced just upon £1300.

On the same day some beautiful *Ornithoptera victoriae*, collected by Woodford in the Solomon Islands, were sold, and fetched £6 15s., £5 10s., £3 10s., and £2 5s. per pair, according to condition. *Ornithoptera urvilleana* only brought 11s., 10s., 14s., 9s., 9s., and 8s. per pair. A fine ♂ *Agrotis subrosea* brought £3 10s., but the marvel of the day's collection came at the end, when *Agriades coridon* ab. *syngrapha*, labelled "Alton Barnes, Wilts," appeared as abundant as "tiger" moths; anyway, 20 of stated British origin were sold in fours at £2 2s., £1 10s., £1 10s., £2 2s., and £1 12s. 6d., whilst an ab. *fowleri*, also from "Alton Barnes, Wilts," produced £1 15s., and a specimen

labelled "*Adonis*, ♀, a fine underside variety, entire disc of hind-wings white; Winsley, Wilts," was bought by Mr. Bankes for £9 9s.

After this one cannot doubt that British collections are still worth an immense amount of money; buyers only want to know that they are getting value for money, either in the way of rarity or careful working out of local forms. Still, there were a few things sold as British, handed on from other cabinets, that one would like to know something more about.

## COLEOPTERA.

**TYCHIUS POLYLINEATUS**, GERM.—This species was reintroduced into our British "list" by the capture of one specimen at Ditchling, Sussex (*vide Ent. Rec.*, xxi., p. 232). I now find I have two more specimens, one captured in July, 1909, the other on August 10th, 1909. Both specimens were secured by sweeping on Ditchling Beacon. From *T. schneideri*, Hbst., its nearest ally, it may easily be distinguished (α) by its larger size; (β) elytra broader at shoulders than thorax; (γ) dark femora; (δ) the more conspicuous band of white scales on the suture; (ε) one white band on thorax only; (ζ) penultimate joints of antennæ more transverse.—HERWARD C. DOLLMAN, F.E.S., Hove House, Bedford Park.

**SYNONYMY OF APION GYLLENHALI**, KIRBY.—*Apion unicolor*, Kirby, must I think be sunk as a synonym of *A. gyllenhalii*, Kirby. After careful inspection of the types in Kirby's collection in the British Museum (kindly placed at my disposal by Mr. C. J. Gahan), I am unable to see any differentia between his species *unicolor* and his type of *gyllenhalii*, other than may be attributed to differences of sex. The species standing in our collections under the name of *unicolor*, Kirby, must therefore be referred to the *platalea* of Germar; the latter name is sunk by Fowler as a synonym of *unicolor*.—Id.

**GALERUCELLA PUSILLA**, WEISE, AT LEWES.—I have a few examples of this recent addition to our coleopterous fauna (due to Dr. David Sharp, *vide Ent. Mo. Mag.*, February, 1910) captured at Lewes in August, 1906. The specimens I had in my cabinet as "*calmariensis*" (?), and I owe it to Mr. W. E. Sharp (who also, I believe, has specimens from Lewes) that I have become aware of their true specific identity.—Id.

**XANTHOLINUS GLABER**, NOR., IN RICHMOND PARK.—Although recorded from Richmond Park by Mr. G. C. Champion, I yet think that the capture of a specimen of *X. glaber* on March 1st, of this year, is perhaps worth placing on record. I captured the specimen by breaking up a decayed bough of a standing oak.—Id.

**GNORIMUS NOBILIS**, L., IN LONDON.—I captured a specimen of this fine Cetoniid on the wing in my garden, Bedford Park, during late June. As a considerable part of this district was, in the past, devoted to fruit-growing, I may, perchance, come across the head-quarters of this beautiful and rare beetle among the vestiges of the orchards that yet remain.—Id.

## SCIENTIFIC NOTES AND OBSERVATIONS.

A SUGGESTION AS TO SOME MARKINGS IN LEPIDOPTERA.—I have been breeding a few specimens of *Callophrys rubi* and *C. avis*, and some of



these attracted my attention, as appearing to have on the underside, as well as the usual line of white markings, a faint white line along the discocellulars on both wings. On examining this line more carefully, it was seen that there was no white line, but that the thickening of the vein caused the scales on its basal side to be raised up, and this, of course, in a continuous line across the wing for the length of the discocellular veins. This different angle at which the scales are set gave in some lights exactly the appearance of a white line. In describing *C. rubi*, Tutt (*A Nat. Hist. Br. Lep.*, vol. ix., p. 90) notes some trace of a white median spot. I am not, however, desiring to improve the description of *C. rubi*, but to suggest a question as to how far this structural condition, giving the appearance of a coloured line, may account for, or be in some way the starting point in, the evolution of the discal lines or spot that is so frequent a feature of butterfly and other lepidopterous markings. Or, rather, more clearly since the discocellular veins do in some way determine the existence of a discal spot, have we here some indication as to how its evolution begins?—T. A. CHAPMAN, M.D., F.E.S., Betula, Reigate. *February 26th, 1910.*

## CURRENT NOTES.

Dr. Sharp records (*Ent. Mo. Mag.*) the capture of *Crepidodera impressa*, Fab., in Hayling Island, in September, 1909. It is probable that the species occurs along the western shores of France. The same coleopterist gives the opinion that *Galerucella pusilla*, Weise, captured at Mildenhall, Horning, and in the New Forest, is distinct from *G. calamariensis*, this differing from Bedel, who considers them specifically the same.

Mr. J. R. Malloch adds two new species of *Anthomyiidae* to the British fauna, viz., *Fannia nigra*, captured at Bonhill and Cardross in Dumbartonshire (founded on four ♂s taken between June and August), and *Fannia femorata*, founded on a single ♂ taken at Aberfoyle on June 30th, 1904.

Another welcome part of the *Noctuelles et Géomètres d'Europe* by J. Culot (Villa-les-Iris, Grand Pré, Genève) has come to hand. This livraison 3 deals with the genera *Triphaena* parts of *Noctua* and *Agrotis*. The figures are exceedingly beautiful and the book is one that ought to be in the hands of all British lepidopterists. We are unable to quite follow the numbering of the figures of Plate v., relating to *Agrotis hyperborea* in the references, and the author appears not always to apply the right names to the forms figured, the original descriptions of which are to be found in *The Varieties of the British Noctuae*, vol. ii., pp. 85-89. Humphrey and Westwood's var. *alpina* could not possibly have come from Shetland, the specimens from which locality are referable to our var. *caerulescens*, and entirely different from the Rannoch form which Guenée erroneously referred to *carnica*, Hering. We dealt with all these difficulties in 1892, and it would be well to get the names of the local forms of this beautiful species rightly applied. But this in no wise detracts from the altogether delightful illustrations.

A special effort was made to secure a good collection of exhibits of applied photography at the Exhibition of the Birmingham Photographic Society, and as the result a fine collection of scientific prints

was shown illustrating various branches of natural history, etc. Entomology was well represented. A series of photographs showing "Habits of Butterflies and Moths," by A. H. Hamm, obtained a medal, while certificates were awarded to A. E. Tonge for "Photomicrographs of Eggs of British Butterflies and Moths," and to H. Main for the "Metamorphoses of *Charaxes jasius*." Messrs. W. Farren, J. J. Ward, F. S. Worsley, and J. G. Duncannon also sent specimens of their work.

The last meeting of the Entomological Club took place on the evening of March 15th, at "Wellfield," Lingards Road, Lewisham, when Mr. R. Adkin was the host. The guests were received by Mr. and Mrs. Adkin, the latter of whom served tea, after which an adjournment was made to inspect some of the treasures and recent additions in Mr. Adkin's collection and entomological library. An excellent supper was served at 8.30 p.m., when a particularly strong muster of members of the Entomological Club and entomological friends sat down, among whom were noticed, Messrs. J. E. Collin, W. Distant, H. St. J. K. Donisthorpe, T. W. Hall, A. Harrison, A. H. Jones, H. Main, A. Sich, E. Smith, R. South, H. J. Turner, J. W. Tutt, and G. Verrall, M.P. The table was delightfully decorated with white and yellow narcissi and tulips. A most delightful evening was spent, the meeting breaking up about 11 p.m.

In continuation of our remarks (*antea*, p. 49) we may state that in *The Standard*, of February 25th, we observed the following relating to the British Museum staff. "The situation of First Class Assistant (Walsingham collection) in the Natural History Department of the British Museum is added to Schedule B appended to the Order in Council of January 10th last." Consequent on this, on March 3rd last, Mr. J. Hartley Durrant was appointed by the Principal Trustees, First Class Assistant in the Department of Zoology, the appointment to date from April 1st. This is, no doubt, from the purely entomological point of view, the most important appointment that has taken place in connection with the curating of the insects, in the Natural History Museum, for very many years—*viz.*, the appointment of an entomologist of the first rank, who knows his work before taking up his appointment, and who will not have to learn after appointment, the scientific importance of the collections placed under his charge. The care of the Walsingham collection will be continuous, there will be no need to waste the years in the re-arrangement of the insects, whilst new material is accumulating and put aside undescribed, and the maximum of use to the entomological public must naturally follow.

We suppose that some day the Trustees of the National Museum will learn that the two important pieces of work to be done in the Museum collections are—(1) The proper curating of the specimens so that they are accurately named and readily found, and that this part of the work can be done quite well by the young assistants if a recognised Synonymic list like that of Staudinger and Rebel be followed, and they act under the instructions of the highly-educated Senior Assistants. (2) The describing of new species which should be published separately by the Trustees, or in one or other of the recognised channels, after which they should be handed over to the young curators to be placed as determined by the Senior Assistants. This should surely be the main work of the highly-qualified members of the staff.



In so large a collection, the disturbance of the arrangement of the species of well-known groups when once placed on the lines of some recognised list is harmful to science, in-as-much as advanced workers at these branches find difficulty in locating species sometimes placed far away from the position assigned in the recognised catalogues, and hence much valuable time is wasted. There are, besides, other details to be considered when cataloguing is in progress, *e.g.*, (1) the tendency for the curators doing catalogue work to look on time as ill-spent that is bestowed on the advanced scientists who use the collection, (2) the waste of time spent in describing already well-known species, when hundreds of unknown ones are awaiting description, (3) the tremendous expense of issuing complete descriptive catalogues of comparatively well-known superfamilies, when the same expense would possibly cover the cost of publication of the thousands of undescribed species now in the boxes of the museum—as unknown to-day as if they had never been captured (perhaps 20 or even 50 years ago).

If there was a large staff, capable of dealing with all the desirable issues that crop up in a large public institution of this kind, the matter would be different, but the fact that there is only a small staff necessitates having an organisation that shall be most effective under the circumstances, and there can be no second thought that what we want as advanced entomologists are—(1) that the material shall be readily available, (2) that the unnamed material shall, at the very earliest opportunity, be placed in position in the collection and represent an advance of knowledge, and no longer be looked upon with awe as buried treasure, involving a large element of ignorance.

With so many enemies attempting so sedulously to filch, for other purposes, the present government contribution to systematics, it behoves us to see that we are getting the maximum scientific value out of our marvellous entomological heritage, a heritage that is the envy of all other workers throughout the world. That a new arrangement could possibly end in the loss of old types, because their names are supposed to be synonyms, should be unthinkable in our National Collection. No individual, however eminent, should be allowed to deal with our public material so that this is possible. Our enemies must have no ground on which they can make any stand against "systematics," which they pretend to despise, but without which they cannot themselves stir hand or foot, and there can be no question that the appointment of Mr. J. Hartley Durrant as First Class Assistant, and the removal of the "Walsingham Collection," to South Kensington, will make for the strengthening of our hands, as well as an increase in the public use and value, of those unrivalled collections in the "cellars" of the Natural History Museum.

The 10th volume of *A Natural History of the British Lepidoptera* has at last been published; although finished almost three months ago, a series of delays over which we have had no control prevented its being forwarded to subscribers until March was well in. If any subscriber has been overlooked in our sending out the volume, we should be glad to hear. We trust that our subscribers will find vol. x at least as valuable and interesting as its predecessors.

We are most anxious to get all possible details of gynandromorphic *Polyommatus icarus* in British collections, together with all known data. We have traced a large number of those that have been recorded,

or sold at Stevens', of late years, but there are still some recorded examples the whereabouts of which at the present time is quite unknown. We want the facts for our volume iv of *A Natural History of the British Butterflies*. We also want particulars of good obsoletely-marked and striate examples of this species and *Aricia astrarche*, particularly of the extreme forms with the submedian and basal spots absent on all the wings=*ab. obsoleta*, or of the *antico-obsoleta* and *postico-obsoleta* forms.

The Conversazione of the Entomological Society of London will be held in the rooms of the Civil Service Commission, Burlington Gardens, W., kindly placed at the disposal of the Society by the First Commissioner of H.M. Works, on the evening of Friday, May 27th. The Secretary, Mr. H. Rowland-Brown, will be glad to hear from those entomologists willing to exhibit, and would be glad to have details of any proposed exhibit as early as possible. Tickets, price 2s. 6d. each, for ladies or gentlemen (evening dress optional), may be obtained from the Resident Librarian, Mr. G. Bethell, 11, Chandos Street, Cavendish Square, W., and cheque or postal order should accompany all applications.

## SOCIETIES.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY. —February 24th, 1910.—*CALLOPHRYS AVIS* ALIVE: Dr. Chapman exhibited a bred living specimen of *Callophrys avis* from South France, and pointed out its divergence from the closely related *C. rubi*. *HYBERNIA AURANTIARIA* ABUNDANT: Mr. Barnett, a long series of *Hybernia aurantiaria* from West Wickham Wood, where it was abundant in November of last year. *GYNANDROMORPHIC LEPIDOPTERA*: Capt. Cardew, gynandromorphs of *Amorpha populi*, *Agrotis puta* and *Dryas paphia*, the last-named captured in the New Forest. *ABERRATION OF POLYOMMATUS ICARUS*: Mr. Russell, a strikingly aberrant form of *Polyommatus icarus* from Reigate, the underside was striated on the right wings only. *CHISLEHURST LEPIDOPTERA*: Mr. Sperring, *Agrotis agathina*, from Chislehurst, and a smoky example of *Arctia villica*. *PERONEA PERMUTANA* IN SUSSEX: Mr. Adkin, a bred series of *Peronea permutana*, from Sussex, and read notes on its occurrence and characteristics. *SWISS LEPIDOPTERA*: Mr. Alderson, a large collection of butterflies taken by him in a six weeks' holiday in and near the Rhone Valley, during May and June of last year. Over a hundred species were represented, most of them being in very fine condition.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY.—February 21st, 1910.—*VARIATION IN LANCASHIRE LEPIDOPTERA*: Mr. Wm. Mansbridge gave an address specially instancing the local variation in such species as *Boarmia repandata*, *Alecta nebulosa*, *Macaria liturata*, *Odontopera bidentata*, and *Melanthia bicolorata*. The various local forms of these species were described and their distribution within the Society's area noted. Mr. Mansbridge exhibited his series of *B. repandata* to illustrate his remarks, also the well known Cheshire forms of *A. nebulosa*. Dr. Tinne also shewed *B. repandata*, including vars. *nigra* and *conversaria*, the latter from the New Forest. Mr. A. W. Boyd, *B. repandata* var. *nigra* from Delamere, as well as *Hybernia defoliaria* and *H. aurantiaria* also from the same locality. Mr. Tait's exhibit included a fine and varied series of *Himera pennaria* from Monks Wood.



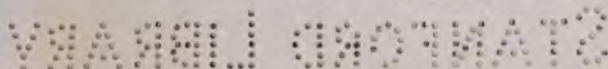
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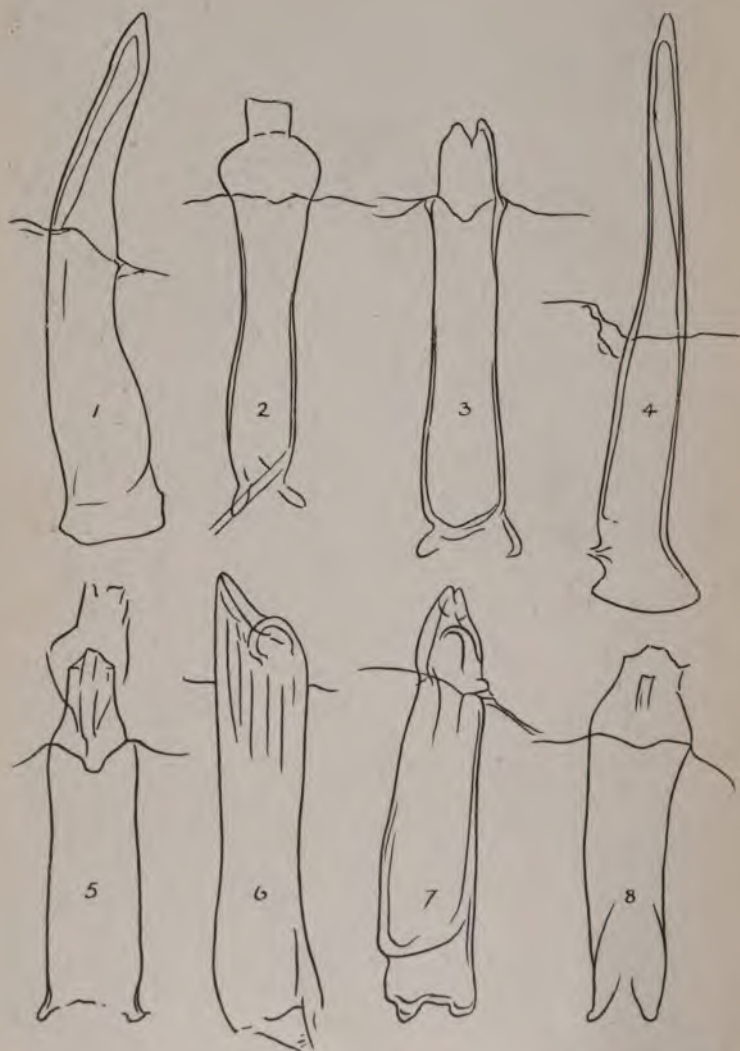
GEORGE WILLIS KIRKALDY.

*The Entomologist's Record and Journal of Variation, etc., 1910.*





Stanford University



Del. T. A. Chapman.

THE AEDEAGUS OF THE PLEBEID GENERA OF BLUES.



# On the generic characters of the ancillary appendages of the Plebeiid section of the *Lycenids* (with plate).

By T. A. CHAPMAN, M.D., F.E.S.

In *A Natural History of the British Lepidoptera*, vol. x., pp. 155 *et seq.*, are some remarks on the male appendages of Plebeiids. I have since arrived at some conclusions of importance in this matter, although they leave many points still to be co-ordinated.

The form of the clasps and dorsal processes define the group very distinctly from any other, but are also very slightly different in different species, yet almost always sufficiently to afford specific characters. But their failure to afford characters to define genera is remarkable, in view of their affording such good tribal and specific characters. This failure is noted specially (*loc. cit.*) in the case of the genus *Plebeius*. In regard to the other genera there referred to, the characters are also rather too indefinite, so much so that they made me very sceptical as to the value of the genera accepted by Mr. Tutt, especially as he gives no definitions of them except by saying what species he puts in them. Nevertheless, besides recognising the groupings so made to have each a somewhat distinctive facies, I had much confidence in Mr. Tutt's instinctive power of recognising generic groups in a case like this. It is, therefore, with some pleasure that I find a character of the appendages that defines several of these genera more exactly than any other yet suggested, and does so fairly in accord with Mr. Tutt's divisions. The *ædæagus* affords a very distinct form in several of the genera. Especially, for example, it separates *Agriades* (*coridon*) from *Polyommatus* (*icarus*), two genera for which no differentiating characters had been proposed.

*Agriades* has perhaps the most easily recognised form of *ædæagus*, well seen in vol. x., pl. xxi., fig. 4, a straight shaft, with a contracted neck at the base, but most characteristically a bulbous swelling at the top. Here it is necessary to define a point in the connections of the *ædæagus*; this is its attachment to the floor of the genital cavity, through which it passes. The *ædæagus* has this membrane attached to it at a particular zone or circle. In *Agriades* this zone is on the bulbous swelling near its lower margin, and the portion of the organ above the membrane is merely the upper part of the bulb and a small projection beyond. *Polyommatus* (*icarus*) agrees with *Agriades* in having a comparatively small portion beyond the zone of attachment, but this portion is in fact a shade longer, and differs *in toto*, in tapering from the zone onwards, and having no trace of a bulb. This portion is also of much slighter texture than the bulb in *Agriades*, which is a dense and highly chitinated structure.

*Aricia* (*astrarche*) has a highly characteristic structure, very different from the two we have been considering. In this, the portion beyond the zone is much prolonged. It may be noted that, throughout the Plebeiids, the portion of the *ædæagus* within the zone does not vary much in length in the different species, generally about 0.65mm. in length, it varies in different species to 0.55mm. to 0.8mm., rarely outside these limits. The portion beyond the zone varies much more widely—in *Agriades* about 0.22mm., in *Aricia* (*astrarche*) it is nearly 0.8mm., longer than the basal portion. It tapers gradually to a point, and appears to have a long lateral opening instead of the nearly

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terminal one in the shorter examples. One inclines to suggest here the question whether this lengthened ædæagus implies any relationship with the Theclids, which one would not perhaps do but for the resemblance to the latter in the dark colour of the upperside of the wings in both sexes, again indicating Theclid affinities. *Anteros* and *isaurica* have a very similar ædæagus; one doubts whether they belong to *Aricia*, however, but require a separate generic position.

*Plebeius* is not altogether dissimilar to *Aricia* in having the external portion prolonged, but not so much so as in *Aricia*. The ædæagus is broader and stouter, and the outer portion tapers more rapidly, and more evidently shows an opening (for the exertion of the eversible membrane) extending along nearly the whole side of the external portion. It is here that one finds the ædæagus giving a note more in accordance with our notions of the genus than the other portions of the appendages. These would place *argus* (*aegon*) and *argyrognomon* in separate genera, but the ædæagus places them together; it also separates from *Aricia* certain species whose claim to belong to that genus consists in little beyond having comb-like teeth to the clasps something like those of *argus* (*aegon*).

Another very definite form of ædæagus is found in Tutt's genera *Cyaniris* (*semiargus*), *Albulina* (*pheretes*), and *Latorina* (*orbitulus*). In these forms the general aspect is not unlike that in *Polyommatus* (*icarus*), but the extremity has a special structure; on its dorsal side it has a process bent into the lumen of the tube, that has on dorsal view a square end (see *orbitulus*), but on lateral view looks like a hook projecting inwards from the dorsal margin. It seems, however, to be a thickening of the wall of the tube possibly straightened outward when the eversible membrane is exerted.

*Vacciniina* (*optilete*) does not agree with any of the other genera very closely. It has a broad straight tube suddenly tapering at the zone.

There are some doubtful species, for example, *euryphilus* seems to be a *Plebeius*, but the ædæagus is very short, and extremely so beyond the zone; *alcedo* and *lucifera* seem to belong to a separate genus having unusually short and broad ædæagi.

*Chilades* has the ædæagus very like that of *Aricia*, but the clasps here mark it off distinctly, the serrated end being on a comparatively long neck. It may be noted that *cnejus* has nothing to do with *Catachrysops*, but it is a *Plebeiid* belonging, or close to, *Chilades*.

Referring to the examples of each genus given on page 154 (vol. x.), this classification by the structure of the ædæagus alters the position of some of the species. *Pyolorita* is not an *Aricia*, but is much closer to, if not actually in, *Polyommatus*; *persephatta* is not a *Cyaniris*, but a *Plebeius*; *escheri* is not a *Polyommatus*, but an *Agriades*; *Hirsutina* is indistinguishable from *Agriades*; *meleager* is a *Polyommatus*.

So far as my examination has gone, the great mass of *Plebeius* belong to the genus *Agriades*. It includes the following forms, of which I have not verified the correct naming of all examples, but I believe there are few, if any, errors—*actis*, *amanda*, *aegagrus*, *armena*, *athis*, *celestina*, *daymara*, *dama*, *damon*, *damone*, *eroides*, *erschoffi*, *escheri*, *glaucias*, *hopfferi*, *hylas*, *iphigenia*, *mesopotamica*, *mithridatis*, *phyllides*, *phyllis*, *poseidon*, *posthumus*, *superba*.

Under *Polyommatus* come *amor*, *candalus*, *celina* (not = *icarus*), *eros*,



*hunza*, *martini*, *meleager*, *psylorita*, *sarta*, *venus*, and especially *icarus*, with its many forms *ariana*, *persica*, *icadius*, etc., and one or two other forms whose names I have not ascertained—*rutilus* and *hyrcana* appear to belong here rather than to *Plebeius*.

*Plebeius* has *argus*, *argyrognomon*, *zephyrus*, *cleobis*, *pheres*, *acmon*, *melissa*, *persephatta*, *aster* (?), *pylaon*, *eversmanni*, *loucei*.

To *Aricia* I find no species unquestionably to belong except *astrarche*, *eumedon*, *idas* and *donzelii*, but *isaurica*, *hyacinthus*, *fulla*, and *anteros*, may do so, or may require a separate division or divisions. To *Vacciniina* belong, as well as *optilete*, *fergana* and *torgouta*. As already noted, this is near to *Cyaniris*, which has *semiargus*, and to *Laticornia*, with *orbitulus* and *pyrenaica*, and *Albulina* with *pheretes*. I much question whether these four groups are not congeneric.

I know little of the American forms, but of these some, such as *isophthalma*, are very remarkable in structure.

It may be noted that in some species the indications are not so crisp and decided as I appear to represent them, and that, for example, in *Plebeius* and *Aricia* I have chosen the most marked examples at hand. Further, I have worked with the actual specimens, *primâ facie* the correct way, but really more liable to error by inadvertence and confusion than by photographs, with the specimens to refer to in cases of doubt or difficulty only.

#### EXPLANATION OF PLATE V.

PLEBEIIDI.—CAMERA OUTLINES OF THE ŒDEAGUS.—The transverse lines mark the "zone" or point at which the Œdeagus passes through and takes attachment to the floor of the cavity.

1. *Plebeius argyrognomon*, nearly lateral view.
2. *Agriades thetis*, it is not usual for the "bulb" to have such a neck above, it usually declines gradually into the terminal portion, dorsal view.
3. *Polyommatus icarus*, dorsal view.
4. *Aricia astrarche*, dorsal view.
5. *Vacciniina optilete*, dorsal view.
6. *Cyaniris semiargus*, lateral view.
7. *Albulina pheretes*, semilateral view.
8. *Laticornia orbitulus*, dorsal view. Viewed in the same aspect, the hooked process is very similar in the three last species.

### Observations on the Hybernation of *Gonepteryx rhamni*.

By J. F. BIRD.

Most of the hibernating butterflies, such as *Eugonia polychloros*, *Aglais urticae*, *Vanessa io*, etc., seek their winter-quarters, when the weather is still warm, in hollow trees, wood-stacks, lofts, sheds, and, *A. urticae* especially, in the attics and dark corners in dwelling-houses, and there remain until spring, safely protected from the perils of frost, snow, and winter storms. But *Gonepteryx rhamni* is evidently a less delicate species that requires no particular shelter, and probably passes through the winter clinging to a plant it sought only for its night's rest at the end of a fine day in autumn, but it happening that the subsequent days were cold, or else a spell of bad weather arriving, it just remained where it was until induced to fly once more on some sunny day in early spring. Twice have I found hibernating specimens of this butterfly, and both times remarked that they were in positions sheltered on the north and east from the bitterly cold winds which blow from those two quarters of the compass. Have other observers

noticed if this is usually the case? If so, I doubt if this happy choice of position is due to either intelligence or instinct on the part of the insect, but is, in all probability, the accidental guidance of nature, brought about by the butterfly's love, or perhaps I ought to say need, of sunshine. All day it haunts the warm sunlit spots in and near woods, and avoids the coolness of the shade, and, in thus following the progress of the sun during its daily course from east to west, would, when the hour comes for it to settle down for the night, be in a situation lighted by the setting sun, that is to say, with a westerly aspect, and, being a woodland species, frequenting principally the rides and clearings as well as the neighbouring lanes and hedgerows, the sleeping-place chosen would almost certainly be screened on the east by bushes or trees; so when the wintry weather arrived at the end of autumn, which would numb the butterfly and make it disinclined to fly, such a situation would be sufficiently sheltered for this hardy species to exist in until the advent of spring.

I add some notes, jotted down from day to day during January and part of February, on the effect of the weather on a hibernating specimen of *G. rhamni*, which may be of some interest, as they treat of the habits of this species at a season when few observations are made, except to record its appearance on the wing, when it has been tempted to indulge in a brief flight on an unusually warm and sunny day, during its period of quiescence through the winter months. I regret that I did not come across the butterfly before the heavy falls of snow we had in December, and also feel rather disappointed that my observations for nearly eight weeks have ended so unsatisfactorily that I am unable to state whether it flew away on its own accord, or whether it met with an untimely end, or was removed, or accidentally disturbed by some person or animal passing by.

January 1st, 1910.—A warm, sunny day. Found a hibernating specimen of *Gonepteryx rhamni* on a stem of *Hypericum calycinum* by the side of the most used path in my garden. The butterfly rests head upwards, with the antennæ pressed close to one another and extended in front; it clings below the stem by its second and third pairs of legs only, the front pair is not used, but kept neatly folded together between the others and against the thorax, after the manner of a Nymphalid. The position is well sheltered on the north by a thick group of evergreen trees and shrubs, and on the east by a terrace, but is nevertheless rather a cool situation, as it receives very little sunshine owing to a *Cedrus deodara*, which shades the spot most of the day; the only times the sun's rays reach there are between 9 and 10 o'clock in the morning, and again for a longer period at sundown. The clump of *Hypericum* was trimmed well back, late in the autumn, as it was spreading over the pathway, and the stem on which the butterfly rests is one of the outer shoots which has been clipped down to about six inches, and, as the new leaves have not yet grown very large, they do not afford much protection from the weather. I am unable to say whether the butterfly was there before the shrub was trimmed, but it is quite possible that it may have only taken up its position on the plant quite recently, for the last few days have been warm and spring-like, and yesterday, December 31st, I noticed a specimen of *Vanessa io* on the wing in my garden.

January 24th.—Weather neither very bright nor warm, but a still



day. Since the beginning of the year we have had samples of all kinds of weather, including a few bright sunny days, but until to-day the butterfly has not moved. It has now crawled an inch or so higher up the stem.

January 25th.—Frosty, but sunny; temperature 28°F. at 10 a.m. The butterfly has crawled right to the top of the stem, and, to me, is very conspicuous, so am afraid it will be noticed by passers by and disturbed.

January 27th.—Yesterday was another frosty day, and last night it was bitterly cold, the mercury falling to 16°F., the lowest temperature recorded by my thermometer this winter, and it is now, at 11 a.m., 26°F. The butterfly has fallen off its exposed perch on to a stem below; it lies flat on its side on a leaf and looks very helpless, but is still able to cling on by its claws to the stem.

January 28th.—A rapid thaw set in, commencing yesterday afternoon, followed by very wild weather, a regular gale, with rain, snow, sleet, and hail in turn. The butterfly has managed to get below the leaf upon which it lay, and is now holding on to the stem below with its head pressed against the overhanging leaf.

January 29th.—The weather greatly improved, and the butterfly has crawled up well under the protecting leaf, to which it now partly clings, and is well hidden from view.

February 5th.—The last few days have been wet and windy, but to-day is bright at times, and the sun, when it shines, is nice and warm. The butterfly has not moved.

February 6th.—It blew rather hard in the night, but the wind dropped towards dawn. After a showery morning, we had a lovely sunny afternoon, and it has been very mild all the day. The butterfly has crawled up the stem and is clinging to a green shoot sprouting from the top, quite exposed to the weather and to view.

February 7th.—Last night was again rather windy until dawn, when the wind dropped. Weather very mild and dull. The butterfly has not moved.

February 8th.—Blew hard in the night and very showery, with some hail until 10 a.m. The wind, which is from the north-west, continued in gusts until the evening. Weather from 11 a.m. very pleasant and sunny, with cloudy intervals, but after 4 p.m. until 6 p.m. several showers of rain and hail, followed by a clear starlight night. Temperature at midday 45°F. The butterfly has not moved since the 6th, but on looking at it to-day, I notice that it is holding on by all three pairs of legs to the leaves.

February 9th.—The butterfly has slightly altered its position so as to face the sunniest aspect; it is, again, only clinging by the second and third pairs of legs, and is holding the front pair in the manner I described on January 1st.

February 11th.—Fine during the morning, but showery in the afternoon, and a terrific hailstorm about 3 p.m. The butterfly remained in its exposed position throughout the morning, but when I looked at it again after the hailstorm, found it had crawled down the green shoot to take shelter among the leaves on the leeward side, and was still only using the last two pairs of legs.

February 17th.—The weather during the last few days has been fairly bright and sunny, but showery at times, and generally windy at

night; the showers frequently mixed with hail and snow. Temperature during the last week has varied from 49°F. down to 31°F., but only one frost in that time. Last night a gale blew from the south-west accompanied by a good deal of rain; the wind increased in force after dawn, and at mid-day was blowing violently, but towards evening moderated considerably. The sun shone brightly during the day, but was frequently obscured by the scurrying clouds. In the morning, the butterfly was clinging under a leaf, and was being much blown about, and later in the day was evidently forced by the high wind to seek a steadier foothold, for, in the afternoon, I found it holding on by all three pairs of legs to the woody stem below the green shoot.

February 20th.—The weather on the 18th was very unsettled, and several heavy showers fell during the day. The wind, which had fallen since the day before, rose again in the night, and another terrific gale raged the whole of next day (February 19th), but decreased slightly during the night, and blew with moderate strength until 9.30 this morning when it again became violent. The gale continued, with rain from 11.30 a.m. until nearly 3 p.m., when there was a tremendous hailstorm, during which there was a single flash of lightning and a peal of thunder, after which the weather improved and the sun appeared. During the last three days the butterfly has been using all its legs to hold on with. This morning at 8.30, while only a moderately strong wind was blowing, it was again resting the front pair, but two hours later, after the wind had increased in force, it was using one of the front pair as well, the one on the windward side. I had another look at it after the hailstorm, and found it had forsaken its old twig for another immediately below to which it was hanging with all six legs under the shelter of a shoot of sprouting leaves.

February 22nd.—Yesterday was a lovely sunny day after another boisterous night. The temperature during the day varied from 48°F. down to 39°F. The butterfly was at 11.30 yesterday morning still where it had taken refuge from the fury of the storm the day before, and, as I noticed then, using all its legs. This was the last I saw of it, for, unfortunately, I was away from home the rest of the day and did not return until after dark. This morning at 8.30 I found the butterfly gone; so my observations have come to an end without my having the satisfaction of knowing what has become of it.

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### Jubilee of the Russian Entomological Society.

The Entomological Society of Russia, one of the oldest scientific bodies in the empire, celebrated its jubilee on February 26th (Old Style)=March 11th (New Style), in the Ministry of Agriculture at St. Petersburg, in the presence of a numerous and distinguished company.

The chair was taken by the venerable president, Petr Petrovich Semenoff-Tian-Shansky, the eminent explorer and traveller in Central Asia, discoverer of the mighty mountains of Tian-Shan, president also of the Russian Imperial Geographical Society, and member of the Imperial State Council. There were also present Mr. Kozloff, another distinguished explorer in Central Asia, Colonel G. V. Kakhovsky, an enthusiastic coleopterist who has made important collections in *Abyssinia*, Professors Rimsky-Korsakoff, Inostranstseff, and Shim-



kievich, academicians Borodnik and Karpinski, Prince Massulsky, Mr. Dostoievsky, secretary of the Russian Imperial Geographical Society and kinsman of the famous author, Messrs. Alferaki, Adelung, Bianki, Skarikoff, Kuzetsoff, and E. E. Groum-Grgimailo, lepidopterist and zoogeographer.

The president opened the proceedings by reading a letter from H.I.H. Grand Duke Nicolas Mikhoilovich, regretting his inability to attend personally, and sending greetings to the society, with his congratulations upon its fiftieth anniversary. The president then greeted the society, and especially congratulated Baron Th. R. Osten-Sacken, the only surviving original member.

One of the Hon. Secretaries, Mr. G. G. Jacobson, gave a brief outline of the Society's history, after which the Vice-President, Mr. Andre Petrovich Semenov-Tian-Shansky, one of the foremost entomologists in Russia, scarcely less distinguished by his work upon the *Chrysididae* and *Dermatoptera* of the Russian fauna than by his studies of the *Coleoptera*, then read a paper upon the scientific achievements and literature published by the Society.

The Secretary then read out, amidst cheers, the names of the honorary members elected in celebration of the Jubilee. These were Councillor V. Th. Oshanin, the veteran hemipterist, who has resided over forty years in Turkestan, Professor N. A. Cholodkovsky, of the Institute of Forestry and Military Medical Academy, A. P. Semenov-Tian-Shansky, Vice-President of the Society, Professor John Sahlberg of the University of Helsingfors, and V. E. Petersen, of the Real Institute of Riga.

Delegates from various institutions next presented their addresses. The only foreigner present, Dr. Malcolm Burr, congratulated the Society on behalf of the Linnean, Entomological, and Zoological Societies of London, and presented their addresses with the expressions of heartiest good will. The references in the addresses to the bonds of scientific good fellowship which does so much to promote the comity of nations, were received with enthusiasm by the meeting, and accepting the addresses, the President charged Dr. Malcolm Burr to convey to the council and fellows of the societies which he represented, their deep appreciation of the compliment paid by English men of science in sending a representative so far, and his hearty concordance in the value of such international courtesies in the scientific world, which strengthened the bonds uniting friendly peoples.

Dr. Poppius and Professor Sahlberg, delegates of the Finnish Geological Society and University of Helsingfors, read an address in French, after which followed a number of addresses from numerous Russian and learned bodies and institutions of agriculture and forestry.

Mr. Oscar I. Jon, Assistant Hon. Secretary, then proceeded to read very many letters and telegrams of congratulations from all parts of the world, including the Rothschild Museum at Tring, the Senchenburgische Naturforschergesellschaft, and the Naturforscherverein of Steiermark, the Royal Society of Naples, and the Entomological Societies of Belgium, Holland, Bohemia, Ontario, Switzerland, and Bulgaria, the University of Upsala, the New York Academy of Sciences, the Smithsonian Institution of Washington, the Indian Museum of

Calcutta, the Society Iris in Dresden, the Geological Society of France, and from very numerous private individuals.

The Society and its guests were then photographed, and after some light refreshments the meeting terminated.

In the evening, the delegates were entertained at a banquet as guests of the Russian Society. Numerous speeches were made, one of the most striking of which was that of Mr. Kuznetso, editor of the *Revue russe d'Entomologie*, who spoke in admirable English, addressing his remarks, through Dr. Burr, to the English nation, ever leaders, as he said, in action and in thought. Since Newton laid the foundation of modern mathematics, and Darwin revolutionised the theory of modern biology, England has continued to pour forth many leaders of science, and in the domain of entomology, he mentioned the names of Stainton, MacLachlan, Saunders, Poulton, Dixey, and Tutt. Dr. Burr\* briefly thanked him on behalf of his fellow countrymen.

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### Butterflies in the Pyrenees in 1909.

By J. N. KEYNES, M.A., D.Sc., F.E.S., and G. L. KEYNES.

In the summer of 1909 we paid our second visit to the Pyrenees, and, in spite of unfavourable weather nearly all the time, we were fortunate enough to find most of the butterflies which we specially desired to catch. Our previous visit to the Pyrenees in 1907 extended from June 16th to July 10th. On this occasion we began collecting on June 28th, ending on July 20th, and the alteration of date enabled us to make the acquaintance of several species for which we were too early in 1907. Nevertheless a full account of our experiences would involve some repetition of facts already recorded (*Ent. Rec.*, vol. xx., p. 176), and we shall therefore mention here only those species that seem to be of special interest.

From June 28th to July 24th we were at Bagnères de Luchon and collected chiefly in the Vallée du Lys and above the Hospice de France. In the former locality we searched carefully for further specimens of the hybrid *Agriades polonus* (*thetis* × *coridon*) of which we took two in 1907, and which we then recorded erroneously as *A. coridon* var. *corydonius*. Unfortunately, however, we never succeeded in getting a really bright day in the Vallée du Lys, and we did not see more than a few specimens of *A. thetis* itself. *A. coridon* was again absent. We did not meet with any *Pontia daplidice* var. *bellidice*, which we previously found in this locality; but we were glad to get several specimens of *Parnassius apollo* ♀s which were very large and dark, much more so than any we have ever taken in Switzerland.

Above the Hospice de France we obtained several specimens of *Anthocaris simplonia*, but they were not in very fresh condition, and their restless and rapid flight made them extremely difficult to catch. In the fields round the Hospice, we were able to supplement our series of *Erebia oene*, but this species seemed to be very much localised. We found it again in some numbers on the ascent to the

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\* In the account given in the *Peterburgski Listok*, Dr. Burr is described as "Ser Bur, Professor of the Cambridge University," also "Doctor of Paleontology," the scarlet Oxford robes of a Doctor of Science and mortar-board cap caused a profound sensation, and were specially mentioned in all the accounts in the Russian press.



Lac d'Oo, where it was restricted to a very narrow zone, at a height of about 4500 feet. Later, on July 14th, we took a single ♀ at Gavarnie, at a considerably higher elevation. *Erebia epiphron* occurred above the Hospice de France, and on the ascent to the Lac d'Oo, and, especially in the latter locality, was of very varied form. In nearly all the specimens, the rusty band upperside front wing is maculate and reduced, so that, in this respect, they do not correspond with the description of var. *pyrenaica* given by Kane, who says that this variety has the rusty band as well as the ocelli very conspicuously developed. On the other hand, a considerable number of the specimens have large ocelli, though in only one is there any suggestion of white pupils. The size of the ocelli is in no way correlated with the development of the fulvous band; the ocelli may be large, while the fulvous band either is reduced to narrow rings or is comparatively well-developed. In one specimen where the ocelli are wholly wanting, the band is quite conspicuous. A similar range of variation was found in specimens obtained later at Gavarnie, the fulvous band being occasionally well-developed, but usually reduced and sometimes almost completely absent. The specimens from both localities are, on the average, distinctly larger than var. *cassiope*, and the ocellations are certainly more conspicuous; also the fulvous band, though not markedly developed, is brighter and more definite than in var. *cassiope*. On the whole, there can be little doubt that the majority of the specimens must be referred to var. *pyrenaica*.

From July 6th to 15th, we collected at Gavarnie, and on July 9th, we were fortunate to take two specimens of what we believe to be *Hesperia andromedae*. Mr. Wheeler agrees with our identification of one of them, but feels doubtful about the other. We took another doubtful specimen on July 12th. We do not remember seeing any previous record of this species from the Pyrenees, and perhaps this is not surprising considering its obscurity and apparent rarity. The most plentiful Hesperiid at Gavarnie was *H. alveus*; we also took *H. malvae*, *H. carthami*, *H. serratulae* (a little doubtful), and *Powellia sao*. In 1907, we found *Erynnis lavaterae* fairly common, but in 1909 saw only one or two specimens of this species.

We seemed to be a little too early for that speciality of Gavarnie, *Latorina pyrenaica*, but we took ten specimens, including two ♀s, all in good condition. We were unable to find any locality which might be termed its headquarters, meeting only with scattered specimens from just above the village up to 6500 feet. This species is very inconspicuous on the wing, and difficult to follow when once sighted. *L. orbitulus* was still rarer; the few specimens we took answered to the description of var. *oberthüri*. We also found *Polyommatus eros* at Gavarnie, but only three scattered specimens. One of these, a ♀, differed from the Swiss form we have taken by having a considerable amount of blue on all four wings; the ♂s do not shew any variation.

*Brenthis pales* was not abundant at Gavarnie, but the few specimens which we took are peculiar on the underside front wing, in having the black markings almost as pronounced as in the form var. *arsilache*; otherwise, they do not differ from the type.

On our previous visit we had been too early for *Erebia lefebvrei*, but on this occasion we were able to take a very fine series. As stated by Dr. Chapman (*Trans. Ent. Soc. Lond.*, 1908, p. 308), this species

occurs in almost every suitable locality from the level of the floor of the Cirque, up to the Port de Gavarnie, that is, from about 5400ft. to 7500ft. It is not easy to distinguish on the wing from *E. stygne*, which was extremely abundant, but the two are not as a rule found flying together. *E. lefevrei* confines itself almost entirely to the very steep scree, which does not facilitate its capture, whereas *E. stygne*, though it frequents the ground on either side of such a scree, is not found actually on the scree, unless it be flying casually across it. *E. lefevrei* does not as a rule take long flights, unless disturbed, but flutters up and down the scree, pitching at frequent intervals on the stones. Apparently, however, it is very sensitive to sound, and it is, therefore, exceedingly difficult to approach. The habits just described are those of the ♂ only; the ♀ is less active, and is found on the rough ground at the foot of the scree. The majority of the specimens have the fulvous patch containing the ocelli on the upperside front wing fairly well developed; but in many it is reduced, and in some it is absent, so that the specimen is uniformly black. Such a specimen, fresh, and with the white pupils well developed, is indeed a magnificent insect. *E. tyndarus* var. *dromus*, *E. lappona* var. *sthenno*, and (as already mentioned) *E. epiphron* var. *pyrenaica*, were the other Erebiids of interest at Gavarnie. *E. gorgone* was not yet out.

Amongst species taken at Gavarnie on this occasion, but not in 1907, were *Parnassius mnemosyne* and *Melitaea didyma*. An unexpected capture, at a height of 6000ft., was *Klugia (Thecla) spini*.

On July 10th, one of us made an expedition into Spain by the Port de Gavarnie, spending two nights at the auberge in the Val d'Arras. In the lower part of this valley he found *Melanargia lachesis*, and higher up, some fresh specimens of *Glaucopsyche melanops*. He took one specimen of the latter species at a height of 6000ft.

On July 16th we moved on to Biarritz, and renewed our search for *Heteropterus morpheus*, on the margins of the Lac de Mouriscot, and in the swamp near the railway station. In 1907 we took a single specimen only. This time we were more successful, though the species was still by no means plentiful. *Coenonympha oedipus*, on the other hand, was fully out and abundant. A curious sexual character in this species is the line above the ocellations on the underside of the hindwing. In the ♀ this line is conspicuous, and always shows a metallic glaze similar to that of the ante-marginal line; in the ♂ it is usually absent, or, if present, always without the glaze. In both sexes, the ocellations on the underside of the front wing vary considerably in number, and in some ♂s they are altogether wanting. In one ♂ that we took the ocellations on the hindwing are white-pupilled on the upperside. In the same locality *Enodia dryas* and *Epinephela tithonus* were abundant and in fine condition; *Thymelicus acteon*, *Everes arylades*, and *Pararge aegeria* (type) were getting over. We did not see any specimens of *Lampides boeticus*.

### Reflections on the phylogenetics of the Pyrameid group.

By G. T. BETHUNE-BAKER, F.L.S., F.Z.S.

The basis of the thoughtful paper on this subject (*antea*, pp. 62, *et seq.*), by Mr. Reuss is apparently that both *Pyrameis cardui* and *P. atalanta* are regular migrants. Is this a fact? We have abundant evidence



of sporadic migration, but regular migration is a different thing. What evidence have we of it?

We are told that *P. kershawi* from Australia and New Zealand is the atavic form, and again, that *P. carye* from South America is nearer the generic prototype—which of the two are we to consider as nearer the prototype, and is the assumption correct? Ocellated spots are not usually considered atavic—are they not an advance on the less intricate pattern of the supposed generic prototype? Hence it follows that blue pupilled eyespots are rather a recent acquisition than an atavism.

It is interesting to note that the blue-centred spots in *P. cardui* are spreading all over America, well up north. I have specimens from many parts of Canada, British Columbia, Manitoba, Montreal, and elsewhere, and we are not surprised when New Zealand specimens show a similar line of development. There are evidently factors in those parts of the world that are favourable to the evolution of this feature, which apparently do not obtain in the Eastern Hemisphere generally. These blue ocellated specimens are stated in the paper we are discussing to occur *solely* in the Sandwich Isles, but this is incorrect, both forms fly there.

It is of interest to remember that, in Madeira, where migration scarcely comes in, no special form has developed. I say where migration scarcely comes in, my old friend, Mr. Wollaston, who lived there for years, and was also constantly to and fro, never saw one of those periodic migrations, and I had another entomological correspondent there in recent years who never reported such an occurrence to me, though we were constantly writing on kindred matters to each other. This raises the point stated by Mr. Reuss that dark forms as from Lapland are induced by cold, and light forms by heat. This I must again query. I have a short series of *P. cardui* from the Island of Nias, fine large specimens which are as dark as any examples I know of, except possibly those small specimens where all the markings are compressed into a very limited area—the fact is that moisture, possibly in combination with other causes, induces darkness, and dryness induces the light forms.

Again, "*P. myrina* proves that the *atalanta*-form tendency is strongly inherent also in the *cardui*-form," but surely if, as is surmised, both species (and I would say others too that I shall mention a little later on) came from the same prototype, we should expect the same tendency in all, the point that would be of special interest would be the development of those species that had gone away from the original stirps, and here I would suggest that an aberration is an individual flying off at a tangent from the parent form rather than a "dependent."

I am rather at a loss to understand why Mr. Reuss places *itea* and *gonerilla* in the same category—apart from the fact that the one occurs in Australia and the other in New Zealand, and so to the man in the street they ought to have something in common, I do not say they ought to experts—to my eyes they are as far apart, specifically, as two species of the genus could be if we take colour and pattern as the standard, and this is what Mr. Reuss is theorising on. This brings me to my last point. Why have the species belonging to the Ethiopian region been left out altogether; *abyssinica* for instance, or *hippomene*? The latter is most important of all for it is the transitional species between *P. cardui* and *P. atalanta*. It is true that it is placed now in the genus *Hypanartia*, &c

has a short broad tail, but it is a Pyrameid in everything else, on the upperside it is very close to *P. atalanta*, with the red changed to yellow in both wings, but with two ocellated spots by the tail of the secondaries, whilst the underside of the secondaries is in pattern a transition between *P. cardui* and *P. atalanta*. The other species of the genus are not so close, but tend to show the line of development, if indeed *hippomene* may not be nearer the generic prototype. I am led to pen these reflections not in any spirit of controversy, for we need theorists, and the paper in question betokens much thought, but when we theorise the scientific mind should be most careful to make its theories centre round the facts, and not turn the facts to centre round its theories.

### Notes on *Agriades thetis* (bellargus).

By G. C. C. HODGSON, M.D.

I have just been able to look through the recently-published account by Mr. Tutt on *Agriades thetis* (*A Nat. Hist. of Brit. Lep.*, x., pp. 331-333), and offer the following remarks on some of the points raised, based on the British material in my own collection.

♂ *AB. VIRIDESCENS*, TUTT.—All the forms show, and the greenish ones to a marked extent, the presence of scales of more than one tint. In the greenish specimens, the green scales are of a pale emerald. A wash of emerald-green water colour "scumbled" over the mixture of cœrulean and ultramarine just reproduces the effect. The best examples in my series come from Lewes (2), Reigate (1), Dover (1), while many others not quite so marked come from Dover and Folkestone, with a few from Surrey and Lewes. One from Wrotham in a friend's collection about equals the best of mine. They occur mostly in the first brood, but some are second brood examples.

DOUBTFUL PATHOLOGICAL EXAMPLES.—In wet seasons (*e.g.*, 1904 1st brood, 1907 1st brood, 1909 2nd brood, especially) I have netted blue males showing patches or spots or lines of purple, quite distinct from the purplish patches observed in bleached specimens. In one of these the patches are quite symmetrically arranged on the right and left wings.

LOCAL COLOUR VARIATION.—In one locality near Lewes, there is a tendency for the ♂ to become darkened to a blackish-blue violet or to a blackish-greenish blue. These examples often show dusky or smoky fringes in which the usual darker patches are obscured. There are always obtainable on this ground, more commonly and regularly than elsewhere observed, specimens of a deepish pure blue colour. All these aberrations just mentioned are, in my mind, particularly associated with August specimens. The conditions, whatever they may be, which give such abundance of *A. thetis* in the August brood, seem to afford a larger percentage. Occasionally (especially in August, 1906) specimens occur of ♀s with dusky fringes, and always both ♂s and ♀s are to be found with heavily marked fringes.

♂s WITH FRINGES APPROACHING PLAIN=ab. *HYACINTHUS*, LEWIN.—In the seven specimens of this form in my collection, twenty-two striae fail to extend through the width of the fringe. In one example, the failure is in the inner half of the fringe opposite four of the nervures of the right upper wing, thus leaving four detached blotches



on the outer half of the fringe. In another example, the failure is in the outer half of the fringe, only two striae extending through the fringe on one wing, the rest terminate as in the more advanced forms of *Polyommatus icarus*, *Plebeius argus*, and *Aricia astrarche*. It often happens that the outer half of the fringe is darker than the inner half, or that a dark line occurs in the middle of the fringe running parallel with the wing outside. Sometimes the marks in the outer half of the fringe tend to form a band parallel to the wing margin.

INTERNEURAL MARKINGS IN THE ♂ = ALBOLINEATA, TUTT.—A form with white lines inside the margin and no black spots, was well-marked and somewhat prevalent in the second brood in 1903, at Folkestone and Dover, but since that year I have in vain endeavoured to supplement and replace that form in my collection.

A. ab. PUNCTA, TUTT.—The form with black submarginal spots with a white edge is common enough, as also is one having white lines with more or less of a black spot. The combination of these markings in a greater or lesser degree, is certainly the commonest form in my experience from 1904 to 1909 in Kent, Surrey, and Sussex. I append statistics from my series, which consists of 194 specimens, 126 upper-side, and 68 underside.\*

			Interneural markings present.	White lines only.	Black spots only.	Both.	No inter- neural markings.
I. Uppersides	126		75**	8	25	42	51
					75		
II. Undersides	60	..	49	4†	11‡	34	11
					49		
Totals	..	..	124	12	36	76	62
					124		

INTERNEURAL MARKINGS ON UPPER WINGS.—In the eleven specimens showing this character, it is not a mere partial presence of some black or white scales or both, but markings are distinctly present, as can be proved by examination with a lens. These markings may be described thus:—

I. In two or three specimens a shade, usually subtriangular in shape, with apex pointing towards the base.

II. A number of white scales occupying part of the space immediately inside the marginal black in the anal angle of the wing. In one specimen the black margin is throughout a very delicate line, but is partly obliterated in the anal angle by the presence of the white scales.

III. In two specimens both black and white scales are present in no fewer than six of the interneural spaces. The white scales are, of course, external to the black ones in position.

IV. In one specimen shades of black scales of arrow-head shape occur in the interneural spaces, leaving in the lower spaces plain blue ovals on the margin.

In the apex of the forewing, black scaling is of course not uncommon, and some of the rest are no doubt developments of this. In Surrey, Sussex, and Kent, I should be inclined to consider the

\* Eight are *striata*, *obsoleta*, etc., and not tabulated.

\*\* Eleven have distinct interneural markings in margins of forewings.

† Five of these have whitish lines edged with black scales.

‡ The best ab. *puncta*, is devoid of white, but most have a few white scales.

presence of interneural combined markings on the hindwings as common, but to an extent approaching unmarked specimens rather than complete development.

NOTE.—Of the 126 set upside, at least 27 were collected purposely for presence of interneural markings, and 10 set purposely to show their absence. Of the 60 (+8) set underside, all were collected without reference to interneural markings.

FEMALE UPSIDES.—I. PATHOLOGICAL TENDENCIES.—In certain seasons, under the influence of cold (?), frosts, etc., ♀s occur in which the upperwings have grey apical wedges approaching those which are so markedly noticeable in *Polyommatus icarus* ♀s. Grey scales may, in some instances, mark the costal area, or specially the nervures also, as well as replace the orange chevrons. Sometimes these grey scales may even alter the general colour of the upperwing, and render prominent the submarginal black spots.

II. CHEVRONS OF A PRIMROSE COLOUR=AB. FLAVESCENS, TUTT.—In the paper in which my remarks on this character occurs, only a very cursory mention of *A. thetis* aberrations in this direction was made. I should have added that I have seen this colour only in specimens where some bleaching has taken place or is present.

DARK ♀ AB. URANIA, GERH.—On pp. 344-5, when reference is made to ab. *urania*, the character, the absence of the orange chevrons on the upside is given, but no mention is made of other forms which lack these markings. I possess a ♀ almost plain, with only traces of blue, and sub-uranial forms without orange scales. A marked aberration occurs at Folkestone (Sidebotham), and has been found in the same spot in Surrey for two years running. In this the blue entirely replaces the orange and other markings above the white-edged black spot; the rest of the upperwing may be either with or without blue. In most of these, eight or ten specimens, no orange scale was visible.

NERVURES.—Two specimens of the brown female, one from Folkestone, have distinctly paler nervures. Two specimens, one from Folkestone, have grey nervures over the upper wings for the most part. Two or three specimens have nervures largely indicated by blue scaling (Cf. ab. of *P. icarus*).

#### MEASUREMENTS.

LARGEST.		SMALLEST.
♀ s. > 38mm. = (2 examples) 38mm. = (4) 37mm. = (1 ab. <i>nigra</i> )	} All in June, 1907, except one in 1904 and one in 1906.	Mr. Grosvenor's coll. just < 22mm.
LARGEST.		
♂ s. > 39mm. = 2 (1 ab. <i>parvipuncta</i> ). 39mm. = 1 38mm. = 4 (1 advanced <i>obsoleta</i> ).		

UNDERSIDES (series of 98).—I note a recurrent variation in displacements of the submedian series of ocelli, observed in 1904, 1905, 1906, 1908, and 1909. A remark on one form of this occurs incidentally in the work with reference to a mixed form. This peculiarity is the displacement of the ocelli outwards towards the submarginal row. As a rule they are very fairly constant in position



halfway between the submarginal row of spots and the discoidal spot, but may occur much nearer to the submarginal series and even in a regular curve without obsolescence or confluence or mixture such as may occur with all underside aberrations. My friends and I always call this form which spreads "*discreta*," and the form with opposite tendency "*glomerata*," where submedian and basal spots cluster round the discoidal with or without mixture of *conjuncta* or *obsoleta* development (since described with reference to this species and *A. coridon*, *A. Nat. Hist. Brit. Butts.*, iv., p. 16). Either of these two, "*discreta*" or "*glomerata*," occurs separately on hindwings or forewings, or all together often asymmetrically. I have *discreta* in *Agriades coridon*, *Plebeius argus* (*aegon*), *Aricia astrarche* and *Polyommatus icarus*: and *glomerata* in *A. astrarche*, and *P. icarus*, and have seen it in *A. coridon*, besides having both in several specimens of *A. thetis* (*bellarqus*).

♂ COLOUR.—A. AB. CZEKELII, AIGN.-ABAFI.—Grey after frost. On p. 339 is noted:—"Ten days after frost,"\* should be about September 10th, after two nights' frost. The frosts were, I think, on September 11th and 12th, and the insects were taken on the 13th and 14th. I went because of the frosts, as in the "Webb collection" are steel-grey specimens of ♂s taken under similar conditions, except that the frosts were more severe. Two were taken in Surrey on the first day after the 2nd frost, and a third at Lewes the next day after that.

LENGTH OF TIME THAT THE FIRST BROOD IS ON THE WING.—Since the year 1902 I have found *A. thetis* in July every year, except 1909, when I was too busy to go out after June 26th, at which date there were plenty to be had. In 1907, on July 23rd, both sexes of *Agriades thetis*, *A. coridon*, *Plebeius argus* (*aegon*), *Polyommatus icarus*, and *Aricia astrarche*, with ♂ *Cupido minimus*, were taken in one valley near Dover.

VARIATION IN DISCOIDAL SPOTS OF UNDERSIDE.—I have two complete specimens of ab. *discoidalis-nulla*, Tutt (p. 337), one taken in Kent in 1905, second brood, and the other in 1909, also in Kent and of the second brood. Several of my specimens have discoidals missing on one wing, e.g., one from Surrey in 1907, but all these, both in Mr. Grosvenor's and my own collections, are teratological examples, in which the costa of the primaries is more or less concave. All my specimens are largely *obsoleta*, or else with large white wedges running from the margin towards the base; Grosvenor's example was not *obsoleta*. It was taken in Surrey in 1907. I have seen no specimen with a discoidal spot absent without some imperfect development in the shape of the wing.

## COLEOPTERA.

COLEOPTERA AT WICKEN FEN IN SEPTEMBER, 1909.—In addition to those species given by my friend, Mr. Donisthorpe (vol. xxi., p. 231), I find I took the following:—In sedge refuse, *Habrocerus capillaris*, Gr., *Heterothops dissimilis*, Gr., *Leisotrophus murinus*, L., *Philonthus unbratilis*, Gr., *P. vernalis*, Gr., *Stenus nigritulus*, Gyll., *S. bifoveolatus*, Gyll., *S. latifrons*, Er., *Lesteva punctata*, Er., *Seydiuacenus collaris*, Müll., *Silpha tristis*, Ill., *Corticaria crenicollis*, Mannh., *Calyptomerus dubius*, Marsh., by sweeping in the fen, *Apion*

\* I did not myself record the capture. The insects were exhibited at the City of London Entomological and Natural History Society.

*vorax*, Hbst., *A. vicinum*, Kirb., and *Helophorus rugosus*, Ol.—(Prof.) T. HUDSON BEARE, B.Sc., 10, Regent Terrace, Edinburgh. April 2nd, 1910.

STENI IN SCOTLAND IN MARCH.—I have had two or three opportunities, during the glorious spring weather which has characterised the last half of March in the east of Scotland, of working moss and flood refuse, and have found many species of the genus *Stenus* in great abundance. At Dunkeld, the following occurred:—*Stenus junco*, F., *speculator*, Lac., *gwynemeri*, Duv., *impressus*, Germ., *nitidiusculus*, Steph., *sinilis*, Hbst., *tarsalis*, Ljun., and *latifrons*, Er., all in moss. At Leadburn, also in moss, *similis*, Hbst., *foveicollis*, Kr., *bupthalmus*, Gr., and *paganus*, Er. At Cobbinshaw, in refuse around the shores of the Loch, *pubescens*, Steph., *canaliculatus*, Gyll., *bupthalmus*, Gr., *nitidiusculus*, Steph., *bifoveolatus*, Gyll., *tarsalis*, Ljun., *junco*, F., *brunnipes*, Steph., *speculator*, Lac., *impressus*, Germ., *ossium*, Steph.—In.

PTINELLA BRITANNICA, MATT., IN A MOLE'S NEST.—On March 20th last, when digging up a mole's nest at Burwell Fen with my friend, Dr. Nicholson, I found a specimen of this very rare beetle. This is the fourth example that has occurred, the first was taken by Matthews on the back of a slug. Dr. Joy took the second in a mole's nest, a third was recorded from France.—HORACE DONISTHORPE, F.Z.S., 58, Kensington Mansions, South Kensington, S.W. April 12th, 1910.

RECORDING COLEOPTERA.—It would greatly facilitate the labour of those who are compiling local, or county, lists, or are working at the British distribution of Coleoptera, if all coleopterists would mark with an asterisk when recording captures of beetles, such species as are new to the district, or the county, or when this is not possible, from a locality not given for the species in Fowler's *Coleoptera of the British Isles*. In last year's *Ent. Mo. Mag.*, Mr. Tomlin published some most interesting and useful lists of beetles from Herefordshire, nearly all the insects, say nine-tenths of these lists, were new records, but the tenth would be perhaps recorded in Fowler from "the Malvern Hills," say, where Mr. Tomlin also recorded it from! It thus meant that every one of these insects had to be checked with Fowler before the records could be made use of, a great waste of time and labour, which could have been avoided if the nine-tenths had been marked with an asterisk! I think I may say I know the British distribution of our Coleoptera as well as most, but it is impossible for anyone to remember the exact distribution of over 3000 species. As I am endeavouring to keep records of our species up-to-date, I shall be very much obliged if coleopterists will kindly fall in with this plan.—In.

## SCIENTIFIC NOTES AND OBSERVATIONS.

THE REAZZINO MELITEA.—In the March number of the *Ent. Rec.*, Dr. Chapman has pronounced *ex cathedra* on the Reazzino *Melitæa* as being a local race of *M. dictynna*, on the very insufficient ground of a similarity in the ♂ genitalia. The grounds, given elsewhere at some length, on which I had pronounced it to be *M. britomartis*, were entirely different, and I still maintain them to be sufficient, especially when it is remembered that there is a brood of *M. dictynna*, at Reazzino, between the two broods of *M. britomartis*. As I am already treating of the subject in a long paper in the *Entomologist*, it is manifestly im-



possible for me to go into details here also; but I will take this branch of the subject as soon as possible, though my notes on the genitalia of the group are not so full as I might have been able to make them, had I felt able to finish the subject in the order I had originally planned.—GEORGE WHEELER, M.A., 37, Gloucester Place, W.

HEARING IN ANTS.—It is still unknown to what extent ants can hear. Forel has expressed the opinion that they are quite deaf. Lord Avebury could never find that they seemed to hear any noises of a variety of different kinds which he tested them with. He considered it probable, however, that ants might produce sounds entirely beyond our range of hearing. We know they possess stridulating\* organs, and some organs in the antennæ and tibiæ have been suggested as hearing apparatus. Recently, through the kindness of my friend Dr. Gordon Wilson, I have tested my ants in captivity with the whistle known as the Galton-Edelmann. The human range runs up to 40,000-50,000 vibrations per second, but tested by the sensitive flame, this whistle is seen to give off musical notes far above that limit. We tried my ants in every way with it, up to its highest range, before which no sounds whatever could be heard by us, but the ants never appeared to notice anything at all.—HORACE DONISTHORPE, F.E.S., 58, Kensington Mansions, South Kensington, S.W. April 7th, 1910.

## NOTES ON COLLECTING, Etc.

HYBERNATED LEPIDOPTERA ON THE WING.—It may be worth notice to say, I found two *Scopelosoma satellitia* at "sugar" last evening, and to-day I saw a *Gonepteryx rhamni* sporting in a sunny lane near here. All through November and December *S. satellitia* was very abundant.—H. G. GREGORY. March 3rd, 1910.

EPUNDA LICHENEA AND OTHER SPECIES AT MULL OF GALLOWAY LIGHTHOUSE.—During 1909, Mr. Henderson, the keeper of the Mull of Galloway lighthouse, kindly sent me a considerable number of moths which had been attracted by the light. Amongst a host of commoner species, I was very pleased to find a beautiful specimen of *Epunda lichenea* (var. *viridicincta*), and one of *Lithosia complana*, as well as *Peridroma ypsilon* (*suffusa*), *P. saucia*, *Dianthoecia conspersa*, and a number of handsome specimens of *Dasypolia templi*. *Anthrocera filipendulae* appears also to occur in that locality.—DOROTHY J. JACKSON, Swordale, Evanton, Ross-shire. April 8th, 1910.

HYDROECIA CRINANENSIS AT ENNISKILLEN.—I am pleased to record the detection of four more specimens of *Hydroecia crinanensis*, all ♂s; taken by Colonel Partridge, at Enniskillen, during his residence in that place, these were and are now in the collection of Mr. C. Fenn. They are of the light form. With them were two *H. lucens* from the same locality.—(REV.) C. R. N. BURROWS, F.E.S., The Vicarage, Mucking, Stanford-le-Hope. April 15th, 1910.

APLASTA ONONARIA IN THE NEW FOREST.—On August 24th last year, I captured a specimen of *Aplasta ononaria* at Burley, New Forest. As I believe this moth has not been caught for several years, perhaps this may be worth recording.—E. L. STREET, Caithness House, Melville Street, Ryde, Isle of Wight. April 13th, 1910.

\* See also a paper by Dr. Sharp "On Stridulation in Ants," *Trans. Ent. Soc. Lond.*, 1893, pp. 199-213.

IS THIS A YEAR FOR *BISTON HIRTARIA*?—It may be of interest to record that, on April 20th, I observed no fewer than twenty examples of this species resting on the trunks of four lime trees, which form part of a row of these trees in one of the main thoroughfares in New Cross. These trees have been under my observation for sixteen years, during which period there have always been three or four examples (never more at one time) on the tree-trunks during April. Until this year (1910), however, they have never been so abundant. It would be interesting to learn whether this is general. Another fact that struck me was, that the whole of the twenty specimens mentioned were ♀s, and, although I searched closely, not a ♂ could I see. The proportion of ♀s is always in excess of the ♂s, but this seems exceptional.—ROSA E. PAGE, B.A., New Cross, S.E.

## CURRENT NOTES.

The *Proceedings of the South London Entomological and Natural History Society*, 1909-10, has just come to hand. It consists of 133+xvi pp., and 13 full-page plates, and is especially well-indexed. We wish some of the larger Continental Societies (Belgium, Italy, Berlin, Vienna, etc.) would adopt the method of indexing found here in their publications—most of the work in the *Annals* or *Transactions* of the large Continental Societies is absolutely buried for want of proper and sufficient indexing. The published price is 5s., and it can be obtained from The Secretary of the Society, Hibernia Chambers, London Bridge, S.E.

The papers are of a high standard of excellence, and when we remember that our three most capable illustrators of entomological subjects by photography in the whole of Europe, possibly in the world—Messrs. F. Noad Clark, Hugh Main, and A. E. Tonge—are essentially South London Society men, and are responsible for the plates, it is needless to add that they are of the very best that photography, aided by half-tone process, is able to give us.

The papers most attractive to the lepidopterist will be "Stray notes on the variation and distribution of *Boarmia repandata* in Britain," by R. Adkin, F.E.S.; "Resting attitudes of Lepidoptera," by A. E. Tonge, F.E.S. (excellently illustrated); "Ticks," by F. Noad Clark (with an abundance of beautiful photos); "Notes on the Diptera," by H. W. Andrews, F.E.S.; "Our Authorities," by H. J. Turner, F.E.S., "Notes on the earlier-stages of *Nola albualis*," by R. Adkin, F.E.S., great credit is due to Mr. Adkin and his illustrators for the work in this paper, whilst the "Larval stages of *Chrysopora hermannella*, Fab.," by A. Sich, F.E.S., and illustrated by his own drawings, will, no doubt, as in the case with all the biological work done by Mr. Sich relating to the Micro-lepidoptera, become the standard work of reference on the biology of the species. Mr. Sich's thoughtful Presidential address, "Lepidopterous Evolution," also will not be overlooked.

The large number of references to aberrations, varieties, particulars of life-histories and habits of various species, makes this one of the most valuable of the smaller annuals published in Britain, and reflects great credit on the Publication Committee—Messrs. R. Adkin, T. W. Hall, A. Sich, R. South, H. J. Turner (*Secretary*), and E. Step (*Editor*).



One cannot help noticing as one looks through the list of members and workers of this active Society, with its 28 years of virile work behind it, what a splendid training ground it has been for much that is best in the larger cosmopolitan society of which its Fellows are so proud—the Entomological Society of London.

The Entomological Society of London, at its meeting on April 6th, nominated the Rt. Hon. Lord Avebury, Mr. H. St. J. K. Donisthorpe, and Dr. F. A. Dixey, to be its representatives at the International Entomological Congress to be held in Brussels in August next. It also appointed Dr. Karl Jordan to be its representative at the International Zoological Congress to be held at Gratz.

Our attention has been drawn to the fact that at the last *Conversazione* held by the Entomological Society of London, regret was felt by some Fellows that more exhibits of Coleoptera were not made. We are desirous to suggest that a larger show in this order would be welcome. Further that, as the function is, on this occasion, fixed an hour earlier, *viz.*, 8 p.m., that a larger attendance might fairly be expected. It is trusted that all entomologists will make an effort to be present and so support the committee and ensure that the *Conversazione* shall be a success. It appears to us an excellent idea to strengthen the means by which entomologists can get a better personal knowledge of one another.

The Thirty-third Annual Report of the Lancashire and Cheshire Entomological Society has come to hand and contains several interesting items of which probably the most welcome to us is an excellent portrait of Mr. Robert Newstead, M.Sc., one of the Vice-Presidents. A short illustrated paper on "The Luperinas," by F. N. Pierce, F.E.S., will be found interesting, as also will papers on "The Value of Variation to a Species," by H. R. Sweeting, M.A., "The Micro-Lepidoptera in the Liverpool district," by W. Mansbridge, F.E.S., whilst the annual address, this year by H. H. Corbett, M.R.C.S., is equally attractive. The Society has a great abundance of Vice-Presidents, whilst the veteran S. J. Capper, F.E.S. still holds the Presidential chair. Altogether the Report will be found very interesting.

A meeting of the Entomological Club was held at the Savage Club on the evening of April 20th, 1910, when Mr. H. Rowland-Brown was the host. The walls of the dining-room were covered with mementoes of the prowess of old "Savages" with pen and pencil; and two noble "Savage" clubs lay on the table, when an excellent spread was negotiated at 7.30 p.m. Among those present were Messrs. R. Adkin, H. St. J. K. Donisthorpe, T. W. Hall, A. H. Jones, Guy Marshall, Meade-Waldo, W. Sheldon, A. Sich, R. South, J. W. Tutt, G. H. Verrall, M.P., Commander J. J. Walker, the Rev. G. H. Wheeler, etc. After supper, business was transacted, and an adjournment was made to the smoking-room, where discussion of matters mainly entomological was indulged in until 11 p.m., at which hour the party dispersed after a most enjoyable evening.

Mr. J. Edwards states (*Ent. Mo. Mag.*) that *Tychius haematopus*, Gyll. (= *junceus*, Boheman), should be added to the list of British coleoptera, and gives a table characterising the species of the genus.

We learn that the Special Board for Biology and Geology have appointed Mr. Leonard Doncaster, M.A., Fellow of King's College, to be superintendent of the museum of zoology, and the Vice-Chancellor

has approved of the appointment. Mr. Doncaster took first class honours in both parts of the Natural Science Tripos, and was Walsingham medallist in 1902.

In the *Revue Mensuelle de la Société Entomologique Namuroise* (April, 1910), Mr. Lambillion gives an interesting account of *Apatura iris* and *A. iole* in the Forest of Buré (which, he says, is really an extension in French territory of the Belgian woods of St. Mard), together with a long list of minor aberrations of these species which appear to be very frequent in this district. The species seem to be even more abundant here than in the well-known woods of the southern Jura.

The 15th Annual Congress of the South Eastern Union will be held at Guildford on June 8th, 9th, 10th, and 11th, 1910, when Professor E. A. Gardner, M.A., will deliver the presidential address. A very extensive programme of Excursions and Lectures by well-known scientists has been arranged, the lecturers including Mr. Fred Enoch, "Aquatic Autocrats and Fairies" (Saturday evening), and Mr. J. W. Tutt, "Colour in Insects" (Friday evening). Members of local societies may become Associates of the Union and thus entitled to attend the meetings, etc., and enjoy all the privileges of the Congress on payment of a sum of 4s., which should be sent to the Rev. R. Ashington Bullen, Englemoor, Woking, Surrey. A large contingent of well-known entomologists attended the 1909 Congress at Winchester, and it is expected that a larger party will foregather at Guildford, an excellent country for collecting under excellent guidance.

## SOCIETIES.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY. —March 10th, 1910.—THE SOCIETY'S COLLECTION OF COLEOPTERA: Mr. West exhibited two cabinet drawers of the society's collection of coleoptera, which he had just remounted and arranged. EARLY LEPIDOPTERA: Mr. J. P. Barrett, specimens of *Nyssia hispidaria*, *Phigalia pedaria*, and *Hybernia leucophaearia* from Richmond Park, and noted that he took the first-named species in the same locality 40 years ago, and that quite one-third of the last species seen were more or less crippled. A RARE EARWIG: Mr. Lucas, the photograph of a very rare earwig, *O. lewisi*, from a specimen recently obtained in the Liverpool Docks. MELANIC NYSSIA HISPIDARIA: Mr. Cowham, two bred intensely black ♀s of *Nyssia hispidaria*. ABERRATIONS OF ANTHROCIDES, ETC.: Mr. L. W. Newman, an interesting series of Anthrocidid species from Bristol, taken by Messrs Smallcombe, including *A. hippocrepidis* ab. *chrysanthemi*, a yellow form, a fine pink form, and a red form with yellow spots, with a confluent form of *A. loniceræ*. He also showed a confluent specimen of *A. riciae* (*meliloti*), and reported that pupæ of a 2nd brood of *Abraxas grossulariata* kept out of doors were still alive. LANTERN SLIDE EXHIBITION: The remainder of the evening was devoted to the exhibition of lantern slides by Messrs. Tonge, West (Ashted), Lucas, Dennis, and Edwards, including series illustrative of the resting-attitudes of insects, the crystals formed from various solutions, rare plants from the New Forest, details of insect structure, various plants attacked by galls, and the natural history and structure of the cockroach. March 2nd, 1910.—LARVÆ OF MICRO-LEPIDOPTERA: Mr. Sich exhibited specimens of *Coleophora troglodytella* bred from larvæ fed on



*Achillea millefolium*, and also larvæ feeding on mignonette seeds, probably those of *Borkhausenia pseudospretella*. SPRING LEPIDOPTERA: Mr. R. Adkin, series of *Taeniocampa gothica* and ab. *gothicina*, selected from a large number of bred and captured specimens. Captain Cardew, a bred series of *Pachnobia leucographa*, very dark in colour, a series of typical *T. gothica* bred from *gothicina* parents, and specimens of *Phigalia pedaria* from Wimbledon, one taken on January 2nd, worn, two on March 18th, in good condition. Mr. J. P. Barrett reported having recently observed *Brephos parthenias* and *Gonepteryx rhamni* in woods near London.

THE BIRMINGHAM NATURAL HISTORY AND PHILOSOPHICAL SOCIETY (ENTOMOLOGICAL SECTION).—January 17th, 1910.—ELECTION OF PRESIDENT AND SECRETARY: Mr. G. T. Bethune-Baker was re-elected President of the section, and Mr. H. Willoughby Ellis was elected to the vacant office of Hon. Secretary. ABERRATION OF *GEOMETRA PAPILIONARIA*, ETC.—Mr. Fountain, *Geometra papilionaria*, L., from Moseley, with wings pinkish-brown, which from its condition must have recently emerged. *Ennomos autumnaria*, Wernb., Elswood, Warwickshire. *Cheimatobia boreata*, Hb., and *Oporabia dilutata*, Bork., Elswood. COLLEMBOLA ABUNDANT: Dr. W. T. Elliott, a species of *Collembola* which occurred in enormous numbers on the gravel walks round the filter-beds at Stratford-on-Avon waterworks. AGRIADES CORIDON AND A. THETIS: Mr. G. T. Bethune-Baker, forms of these species from Asia Minor, Spain, Greece, Algeria. February 21st, 1910.—Mr. P. H. Harvey, a fine specimen of *Abraxas grossulariata* ab. *lacticolor*, taken at Warwick. ABNORMAL COCOONS OF *LACHNEIS LANESTRIS*: Mr. Lloyd Chadwick, curious cocoons of *Lachneis lanestris*: some were double, and some contained more than two pupæ, the cocoons being joined together laterally with an outer envelope to cover the group. STYLOPISED HYMENOPTERA, ETC.: Mr. A. H. Martineau, *Andraena wilsella*, Kirby, and another specimen of the same species attacked by *Stylops*. The parasite alters the whole appearance of its host, and led to Kirby describing styloped specimens as another species, *A. coveriuscula*. Also a nest of *Odynerus*, sp., in the hole of a cotton-reel which was filled with cells and sealed up at both ends. THE BRADLEY COLLECTION: Several drawers of the Bradley collection of Diptera and Odonata (which the Society is holding in trust for the Birmingham Corporation pending the completion of the Municipal Natural History Museum) were examined by the members. March 21st, 1910.—SPILODES PALEALIS FROM JERSEY: Mr. G. T. Fountain exhibited a specimen of *Spilodes palealis* from Jersey. BRYOPHILIDÆ AND BOMBYCOIDÆ: Mr. Lloyd Chadwick, *Bryophila perla* (Warwick), *Triaena psi* (Warwick), *Acronicta leporina* (Wye Valley and Denstone, West Staffs), *Apatela aceris* (Brockenhurst), *Phaëtra megacephala* (Princes-thorpe and Snitterfield), *P. rumicis* (Long Itchington), *Craniophora lignstri* (Snitterfield), *Diloba caeruleocephala* (Warwick). He also stated that a larva of *Jocheaera alni* had been sent to him from Leek Wootton, Warwickshire. Mr. G. T. Bethune-Baker, species of *Zallissa* and *Pseudozallissa* from New Guinea; species of *Diphthera*, *Dipterygia* and *Euplexia* from New Guinea; species of *Acronycta*, New Guinea and Europe, and *Bryophila*, Europe. Mr. H. Willoughby Ellis exhibited aberrations of *Bryophila perla* from Knowle, *Triaena tridens*, *T. psi*, *Phaëtra megacephala*, *P. rumicis*, and *Diloba caeruleocephala*,

Knowle, and a bred specimen of *Jochaeaera alni* from Moseley. COLEOPTERA: Mr. W. Ellis also showed the following Coleoptera:—*Liparis coronatus* (Falmouth), *Hylecoetes dermestoides* (Cannock Chase), *Necrophorus vestigator* (Bedfordshire), *Carabus nitens*, dark ab. (New Forest), *Malachius aeneus*, (New Forest), *Clythra quadripunctata*, and illustrated its life-history, the species dwelling in the nests of *F. rufa*, L. LUCANUS CERVUS IN THE BIRMINGHAM DISTRICT: Mr. Wyllard Griffiths remarked upon the few records that had been made of *Lucanus cervus* in the Birmingham district, and said that one had been sent to him from Bewdley. COPULATION OF THE BOARMIIDÆ: Professor Carlier stated that the *Boarmiidae* copulate in a vertical position, the ♂ being below the ♀, and, therefore, in order that fertilization may take place, the spermatozoa must pass upwards. The interesting question was raised as to whether it was accomplished by ciliary action, or by an ejecting apparatus in the ♂. SCALES OF LEPIDOPTERA: Information was also asked for as to the composition of the colour pigment in the scales of lepidoptera, great difficulty being experienced in analysing the very small quantities of material available. SEMI-LOOPING HABIT OF NOCTUID LARVÆ: Mr. Lloyd Chadwick pointed out that very young larvæ of *Triphaena fimbria* behaved like "loopers," and were apparently not furnished with the usual number of prolegs which developed later; he also pointed out that Buckler says that the larvæ of *Triphaena pronuba* do the same. Mr. Fountain said that young larvæ of *Pieris brassicae* also "looped." [The question of the semi-looping habit and its possible origin and use have been discussed at length in connection with the structure and modification of the prolegs in *A Natural History of the British Lepidoptera*, vol. i., pp. 35 *et seq.*, and pp. 52 *et seq.* It is, of course, quite normal in a very large number of species.—ED.]

## OBITUARY.

### George Willis Kirkaldy, F.E.S. (with portrait).

By the early death of George Willis Kirkaldy, entomology loses one of her most active and enthusiastic devotees, who, had he been spared, would certainly have achieved a great career.

He was born at Clapham on July 26th, 1873, and so was barely 37 years of age when he died. His father was the late William Hay Kirkaldy, and his mother Jane Steele Kirkaldy, daughter of John Willis. Inheriting Scottish blood from both his parents, intense pride of nationality was one of the most striking features of his character. He traced his ancestry to Sir James Kirkaldy, Treasurer to James V. of Scotland, and father of the famous Sir William Kirkaldy de Grange, who held Edinburgh Castle for Mary, Queen of Scots.

During his life in England, he joined the London Scottish volunteers, and studied the Gaelic language with enthusiasm; he used to tell with pardonable pride, how, when tramping, in kilt of course, in the wilder parts of the Highlands, his acquaintance with the language, though necessarily far from perfect, was of the greatest value, if not actually indispensable; it certainly made him a welcome guest in the humble but hospitable huts of the crofters.



As is the case with all really enthusiastic entomologists, his love of science and natural history showed itself at an early age, and quickly became a veritable passion. At the City of London School, he became a vigorous member of the Natural History Society, and impressed his personality upon his young colleagues and masters, so that he was appointed Curator of the School Museum.

He followed both his father and his mother's family's example in entering a shipping business, where his overflowing energy manifested itself as much in his work as in his hobbies. In spite of the strain of daily toil in the city, he worked early and late at entomology: a voracious reader, he studied late into the night; in summer, when the days are long, he snatched a brief hour with the microscope before starting for the city in the morning, and on returning home in the evening was not too fatigued to make the most of the remaining daylight.

A regular attendant at the meetings of the Entomological Society, which he joined in 1893, he was a familiar figure among piles of books in the library; he occasionally was seen at the meetings of the South London Entomological Society at Hibernia Chambers.

A glutton for work and an omnivorous reader, he had a wide and sound knowledge of zoology, and yet found time to gain a very useful acquaintance with a variety of subjects. Music, above all, was a passion with him, and sometimes a good orchestral concert could draw him away even from entomological meetings.

Living in London, he had little opportunity of gaining a colloquial acquaintance with many languages, but from his correspondence with numerous colleagues all the world over, and his literary researches, he could read with varying ease, not only French, German, Italian, and Latin, but also Spanish, Danish, Swedish, Bohemian, and afterwards Hawaiian. He occasionally published brief papers in the first three languages, and his manuscript did not require a great deal of correction.

Although in later years he included within his scope the Hemiptera of the world, his first favourites were the aquatic groups of the British Fauna. In 1897, he published "Notes on the genus *Sigara*," in the *Entomologist*, followed by "Synonymic notes on Aquatic Rhynchota," which led to "A Guide to the Study of British Waterbugs," which appeared at intervals in the pages of the *Entomologist* until 1906. He contributed numerous papers to the *Annals and Magazine of Natural History*, the *Journal of the Quekett Microscopical Society*, the *Natural History of Sokotra*, *Fauna Hawaiensis*, and several continental journals. His earliest important original paper was his "Revision of the genus *Notonecta*," published in the *Transactions of the Entomological Society of London*, in 1898.

But though the days at Billiter Avenue were very happy ones, when he was surrounded by friends and familiar faces, he gladly accepted a post which offered more scope to his abilities and qualifications, on the entomological staff of the United States Department of Agriculture and Forestry at Honolulu, shortly afterwards transferred to the Hawaiian Sugar Planters' Association. In the summer of 1903 he said good-bye to his English friends, and sailed for the perpetual summer of the South Pacific. But he remained on the advisory staff

of the *Entomologist*, which he had joined in 1901, frequently contributing to its pages.

In 1906, he married Miss Annie K. Brenham, and had two children; the firstborn, the son and heir of whom he was so proud, died a year ago; the other, a daughter, survives to console his widow.

Not long after his arrival in Honolulu, he met with an accident that crippled the rest of his life, and eventually brought him so early to the grave. While he was riding on horseback, his leg was caught in the spokes of a buggy wheel, nearly wrenched off, and fractured in five places. The bone refused to set, in spite of repeated operations. Early this year, when visiting San Francisco with his family, he was persuaded to undergo yet another operation, five days after which he succumbed, on February 2nd.

His uncompromising advocacy of the rule of priority in nomenclature, his stern adherence to the strict letter of the law, his absolute refusal to admit emendations or the slightest elasticity in the rule, his unswerving confidence in himself, and impetuous character, sometimes brought him into collision with his fellow workers. It was a fundamental article of faith with him, that only by such means could ultimate stability of nomenclature be attained, and that was the object for which he was working in the general "Catalogue of the Hemiptera," a monumental and voluminous work, the first tome of which appeared last year (Cimicidæ); a second is in the press, and will appear posthumously.

He leaves many friends in all parts of the world, friends who admired and respected him. We may perhaps be allowed to quote an appreciative letter from a mutual friend and colleague from the other side of Europe. "Ce n'est pas seulement un ami sincère et très dévoué que nous venons de perdre, mais un homme de grande valeur, loyal et très-conscientieux, comme on n'en rencontre pas souvent. Son œuvre colossale\* nous restera comme le fruit d'un puissant et infatigable travailleur qui a eu le courage de faire de précieuses et excellentes réformes en Hémiptérologie, et on aurait grand tort de lui reprocher les quelques petites erreurs de détail qu'il aurait pu commettre, car il était le premier à les reconnaître et à les réparer lorsqu'on lui en signalait avec des apparences de raison. Malgré les quelques ennemis qu'il a pu avoir et que seule, sa grande franchise aurait pu rendre jaloux de son œuvre, il n'en restera pas moins dans les premiers rangs des Hémiptéristes de notre époque où il avait su se créer une place d'honneur. Enfin cette mort si inattendue m'a absolument consterné, car j'avais pour Kirkaldy non seulement une profonde et sincère affection, mais encore une très haute estime que justifiaient amplement ses vastes et solides connaissances. La sûreté de ses vues d'ensemble le sortait tout-à-fait de la vulgaire banalité où se complaisent tant d'entomologistes. Sa perte est certainement pour la Science un malheur irréparable pour le moment, et je la déplore du fond du cœur."

That is indeed a noble epitaph, but it is thoroughly well-deserved.—M.B.

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\* He had described nearly a thousand species of Hemiptera.



## A Month in the Rhone Valley in 1909.

By ROSA E. PAGE, B.A.

The spring and early summer of 1909 had been unusually cold and rainy; reports from all parts were most unfavourable; in the middle of July we were warned not to attempt the mountains, as people who had ventured thither were spending their time round hotel fires, the clouds being quite low down.

However, buoyed up by the hope that we might be more fortunate than those who had gone out earlier in the season, and that species might be later than usual, we arranged to spend the first few days at Éclépens. Here, indeed, we had magnificent weather, but did not find insects so plentiful as in 1907.

On Friday, July 23rd, we went in search of *Apatura ilia*, five or six of which were seen, but proved to be very much on the alert and difficult to net. *Limenitis camilla* was flying in the wood, but did not come within reach. Returning to the road, and continuing up the hill in the direction of Cossonay, we captured several *Apatura ilia* and one *A. iris*, which were alternately skimming up and down the road, and settling on mule-droppings. Many others were flying from tree to tree, but could not be coaxed down, when once they had settled. *Gonepteryx rhamni*, *Leptosia sinapis*, and *Pieris napi* were all in splendid trim, gently flitting from flower to flower, along the tall hedges.

The marsh proved disappointing; *Enodia hyperanthus* was abundant, mostly of the ab. *vidua* form; a few *Lycaena arion* and *L. alcon* were netted in good condition; *Melanargia galatea* was numerous, but going over. On the 24th, the steep path near the mouth of the tunnel was taken. On the ground above, *Parnassius apollo* var. *pseudonomion*, *Nisoniades tages*, *Gonepteryx rhamni*, and *Coenonympha arcania* var. *darwiniana* were found, all in good condition, but *Nordmannia ilicis* was worn.

Farther on, through the wood, we found nothing of note, so returned to the Cossonay road about 4 p.m., hoping to see more *Apatura ilia*. In this we were disappointed, not a specimen was to be seen, although the road was still bathed in brilliant sunshine; evidently it was too late in the day.

The next morning we went straight to the Apaturid haunts, but although several *A. ilia* were seen, we failed to net them. Returning to the La Sarraz Road, we turned off to the right, and took the rough road up the hill and through the oak-wood. On the slopes, among the scrub, was *Issoria lathonia*, evidently just out; a few *Gonepteryx rhamni* and *Argynnis niobe* were resting on the flowers, and a couple of *Scolitantides baton* were netted. In the wood were *Limenitis camilla* flying round the trees, and across the glades, together with *Apatura ilia*. We were very pleased to see *Pararge achemine* for the first time; these were plentiful, but very much worn. Very finely marked *Coenonympha arcania* were taken, both in the woods and on the edge of the marsh.

On examining the captured specimens, we found that, while *Apatura iris* was in first-rate condition, *A. ilia* had lost much of its freshness; we were evidently too late for the latter species in spite of the season having been so much retarded. We were, however, amply

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compensated by the pleasure of having seen these species in their habitat, and cannot imagine anything more beautiful than one of these fine insects resting on the dusty road, with wings outspread, the brilliant hues glowing in the sunshine; or the sudden flash of colour as they dash past one.

From Éclépens we went on to Aigle, and on the 27th spent a delightful day on the Sépey Road. As we commenced the ascent, *Hirsutina damon* ♂s and *Agriades coridon* (chiefly ♂s) soon appeared, both in fine order, with a few *Celastrina argiolus*, which species was just emerging; then, as we approached the rocks, *Satyrus cordula* and *S. alycone* in numbers. The *S. cordula*, mostly ♂s, were as fresh as one could wish them to be, which is more than one can say of *S. alycone*. Among these flew swarms of blues, mostly *Hirsutina damon* and *Agriades coridon*, with an occasional *Nordmannia ilicis* and *Klugia spini* and one or two *Erynnis lavaterae*; *Urbicola comma* and *Adopaea lineola* mingled with the rest. A few *Melitaea didyma* ♂s added flashes of vivid colour, all beautifully fresh, among them being a few nice underside abs. *Apatura ilia* and *Limenitis camilla* were also met with (but not in any numbers), with a stray *Colias phicomone*, and one splendid specimen of *Euvanessa antiopa*. A little above the café were *Erebia aethiops* var. *violacea* and some small *Parnassius apollo* with pale spots. Near Le Sépey village, the hay had all been mown, and there was a scarcity of insects, so we turned back; but by four o'clock the road was partly in shadow, and collecting was over for the day, with the exception of a few belated specimens, which seemed loath to leave the flowers.

On the 29th, Mr. Page went over to Charpigny, at Mr. Fison's kind invitation, and was much interested in looking through his choice collection. He secured in the grounds, thanks to Mr. Fison, some *Papilio machaon* approaching var. *aurantiaca*, and a single specimen of *Bithys quercus*. Another visit to the Sépey Road on this date produced, besides more specimens of the insects previously mentioned, many more Theclids (both *Klugia spini* and *Nordmannia ilicis*), but these were mostly in rags. They were very fond of resting on the flowers of the dwarf elder, especially in one corner near the rocks. *Erebia aethiops* were more numerous than on the 27th; a few *Polygonia c-album* and *Aporia crataegi* were netted. *Limenitis sibylla* was met with at intervals resting on the road, and *Leptosia sinapis* flitted gently along the hedges. Near the café, much to my surprise and pleasure, I chanced to meet Mr. and Mrs. H. J. Turner, who had come over from Montreux, and were working in the reverse direction.

On July 30th, we reluctantly left Aigle and went on to Sierre, and in the afternoon walked over to Chippis. On rough ground to the left, among vineyards, *Pontia daplidice* was flying, together with *Pieris rapae*. By the right bank of the Navigenze, we came across *Parnassius apollo*, *Eugonia polychloros*, *Limenitis camilla*, and *Colias edusa*. *Melitaea didyma* was flying on the slopes with many *M. phoebe*, the latter very much worn. *Iphiclides podalirius* was also there, though not in good condition. A specimen of *Polyommatus meleager* ♂ was taken near the electric generating station. On marshy ground near Sierre we captured two *Rumicia phlaeas* ♂s, in fine condition, but otherwise the marshes produced very few insects.

July 31st was spent in the Pfynwald, walking from Leuk to Sierre;



a very hot, dusty, and monotonous walk, with a strong wind and very little sun. We secured, however, a very nice series of *Brenthis dia* on a little spot of ground near Susten. We searched all the meadows for *Polyommatus meleager*, but without success. *Agriades coridon* and *Polyommatus icarus* were ubiquitous. In some meadows on the right were many *Iphiclide podalirius*, which were a delightful sight, with their skimming flight and graceful poising on the flower-heads, from which it was often difficult to distinguish them. Velvety *Enodia dryas* emerged heavily from the low bushes, but proved to be more wary than they looked; perfectly fresh *Gonepteryx rhamni* fluttered here and there; *Epinephele lycaon*, *Urbicula comma*, and *Colias hyale* (the two latter not in good trim) were in numbers. Nearing Chippis, we took a specimen each of *Euanessa antiopa* and *Pontia daplidice*, with a few *Satyrus alcyone*.

The next day we tried the slopes on the right bank of the Navigenze, towards Niouc; but, although the day was sunny, we were unsuccessful with regard to *Polyommatus meleager*. There was a complete dearth of insect life on the same ground that teemed on the previous visit. All the *Melitaea phoebe* had disappeared. But, on returning to Sierre, we found *Pontia daplidice* flying on the patch of waste ground mentioned before, all in fine condition, and mostly ♂s. We were tempted to remain at Sierre for the emergence of the ♀s, but were anxious to push on to Zinal, where we spent the following fortnight.

The walk from Sierre to Zinal was easily managed in a day, and proved to be a most interesting one, although very little entomology was done *en route*. The abundance of the mistletoe on fir-trees, and the variety of wild fruit, especially the tiny wild gooseberries, and the ripe but small black cherries of delicious flavour, were noticed. The day being dull, with sunny intervals, and the valley mostly in shadow, very few insects were about. Some rather yellow *Melanargia galatea* at Fang, with *Epinephele lycaon*, *Hipparchia semele*, *Satyrus alcyone*, *Erebia aethiops*, and *Agriades coridon* were the only butterflies seen. Fine broods of *Vanessa io* larvæ, almost fullfed, and tiny larvæ of *Aglais urticae* were feeding on nettles by the roadside. The first few days at Zinal were dull, wet, and very cold, with snow falling at night.

On August 5th, on the path leading to the Cabane de Mountet, were *Erebia tyndarus*, *Melitaea dictynna*, and *Colias phicomone*; *Heodes virgaureae* of rather deep hue, with a few *Aricia donzelii* and one *Albulina pheretes*. *Coenonympha satyrion* was, however, very much worn, while *Pieris napi* was in good order and well-marked, and included some var. *bryoniae*, some of which were inclined to be small. Here we found *Parnassius delius* ♂s in fine condition, flying swiftly on steep slopes near a rushing stream, and difficult to net, owing to the roughness of the ground. Another welcome capture was a ♀ *Eneis aello*, the only one seen. The slopes above the moraine of the Durand Glacier were evidently good ground, as was shown by the rising of insects whenever gleams of sunshine came, the sky having clouded over during the morning. Mr. Page, however, while pursuing a particularly provoking *Parnassius delius*, had the misfortune to rupture the ligaments of one of his ankles, which confined him to the hotel, where he was obliged to spend the remainder of his holiday in setting.

An expedition to the Roc de la Vache on the 6th, produced no

*Albulina pheretes*, although all the slopes were examined. *Colias phicomone* was very common, and, strange to say, those on the lower slopes were fresher than those found higher; while *Brenthis pales* was everywhere, mostly with dark undersides. *Coenonympha satyrion* were numerous on rough ground in one of the bends in the path, as were *Erebia tyndarus*; *Pontia callidice* was scarce.

The path to the Cabane de Mountet was visited on the next day, when *Parnassius delius* was in abundance with *Colias phicomone* and *Brenthis pales* of lighter colour than those found on the opposite slopes. Scarcer species were *Aricia donzelii*, *Albulina pheretes*, *Latorina orbitulus*, and *Vacciniina optilete* (these four blues were just coming on). A very ragged and belated specimen of *Parnassius mnemosyne*, the four wings being whole, but quite dévoid of scales, and a ♀ *Aporia crataegi*, completed the list.

On August 11th, I worked along the left bank of the Navigenze, and found that *Parnassius delius* and *Pieris napi* were now becoming worn, but a fresh brood of *P. brassicae* had emerged, these being of good size. *Brenthis ino* was evidently over, a few worn specimens being taken, but *Polyommatus hylas* and *Issoria lathonia* were emerging. In the afternoon, I tried the slopes leading to the Col de Sorrebois, and was delighted to find, in the wood, many bushes laden with wild red currants, at that time very far from being ripe. Beautiful *Rosa alpina* and another variety of pale pink wild rose were still in bloom. *Argynnis niobe* var. *eris* was just out, and an interesting capture was a *Cyclopides palaemon*, which, I think, has not been previously recorded from this valley.

The next day was spent on the Corne de Sorrebois. Another *Cyclopides palaemon* was taken, in splendid condition; the only insects seen in the wood were *Erebia ligea*, *E. goante*, and *E. ceto* (very worn), which were flying at the tree limit, 7000ft. up. Above this height *Brenthis pales* was very abundant, and the captures included two very nice ab. *napaeae*. There are numerous mountain streams on these slopes, and the ground being mostly spongy, forms fine *Parnassius delius* ground. This species and *Colias phicomone* was common, but both had seen their best days; in some sheltered corners *Erebia melampus* and *E. tyndarus* were in swarms. In the late afternoon a good many *B. pales* were observed asleep in the centres of ox-eye daisies, the various tints of the marbled undersides toning beautifully with the paler colours of the flower.

The banks of the Navigenze were worked on several occasions. On moist patches of sand were swarms of *Urbicola comma* and *Hesperia alveus*. *Parnassius delius* was fond of settling in the grass in the afternoon, and would rustle out with much fuss at one's approach; under these conditions it proved very much easier to net than when flying at full speed up and down the rocky and steep mountain slopes. *Aricia donzelii*, always in fine condition, mostly ♂s, was spread sparsely all over the valley, i.e., from the Chapelle St. Laurent upwards, and generally occurred in company with *Latorina orbitulus*, *Vacciniina optilete*, *Plebeius argus*, *Cyaniris semiargus*, *Cupido osiris* (*sebrus*), and *Aricia astrarche*, while *Colias phicomone* appeared to be quite the commonest butterfly at Zinal.

I will conclude with the following dialogue, which took place at Zinal, and may perhaps throw a little light on the attitude of the



peasant towards entomologists:—*Peasant woman*: "Bonjour, madame, avez-vous beaucoup ramassé?" *Entomologist*: "Un peu, madame." *Peasant*: "Qu'est-ce que vous faites avec ces papillons—là?" *Entomologist*: "Pour faire collectione." *Peasant*: "Eh bien! Pourquoi? Pour manger?" (très sérieusement)!!

### Ants and *Platyarthrus hoffmanseggii*.

By C. CRAWLEY, B.A., F.E.S.

It is generally stated by entomologists that ants take no notice whatever of the small white crustaceans that live in their nests. The following notes will show that under certain circumstances the ants interfere with their guests, and generally seem aware of the presence of strange ones.

It must first be noted that the *Platyarthri* themselves often shun contact with their hosts. If a *Platyarthrus* be observed carefully in an artificial nest, it will be noticed that it turns aside whenever it touches an ant; and when, as often happens, an ant steps on the back of a *Platyarthrus*, the latter remains motionless for a few seconds before hurriedly moving away. The ants also often turn round with open mandibles when a *Platyarthrus* passes close to them.

In August, 1896, an ant (*Lasius niger*) was observed, while walking about the nest, to rest her forefeet on a *Platyarthrus*. The latter raised its tail, and the ant started back and went away. A similar thing was noticed not long after, in the same nest. Also in September, 1896, a *L. niger* was seen lifting a *Platyarthrus* that had been introduced from a nest of *L. flavus*, and a few minutes later another of these strangers, on being examined by an ant, raised its tail, and the ant immediately went away. Another stranger, on entering the nest, was met with every appearance of hostility.

Again, on August 12th, 1897, I put two fullgrown *Platyarthri* from a nest of *L. flavus* into one of *L. niger*. Soon after an ant picked up one of them by the edge of its shell, and carried it to the door of the nest, then dropping it. The *Platyarthrus* ran back into the nest, and no more notice was taken of it.

On July 11th, 1898, I brought some *Platyarthri* from a nest of *L. flavus* in Surrey, and put them into a nest of *L. niger* taken in Oxfordshire. The ants attacked them, killing one and subsequently eating it, and driving all the rest from the nest. (This nest of *L. niger*, as well as the others mentioned above, possessed *Platyarthri* of its own). A few weeks later I put some from a strange nest of *L. niger* in the neighbourhood into my nest of *L. niger*. The ants attacked them at first, but eventually desisted, and the *Platyarthri* were allowed to remain unmolested, with the exception of one, slightly injured in capture, which was devoured. Three days afterwards this nest remained too long in the sun, whose heat through the glass cover killed all the *Platyarthri*. The ants dismembered the dead bodies and used them as food. To replace these *Platyarthri*, I transferred several the following day from another nest of the same species of ant. These *Platyarthri* were examined by the ants, but not molested.

Again, on September 22nd, 1899, I put three *Platyarthri* from a nest of *Myrmica scabrinodis*, into a nest of *L. niger*. On visiting the

nest five hours later, I found all the *Platyarthri* dead and outside the nest.

All the *Platyarthri* in a nest of *M. scabrinodis* were found outside the nest dead, many being in a mangled condition, on December 14th, 1899, after a sharp frost. Those in the other nests exposed to the same conditions, lived all through the winter.

In March, 1900, I saw a *Lasius umbratus* attempt to seize a *Platyarthrus* in her mandibles. It was one of those belonging to the nest. Some specimens introduced in February, 1903, from a nest of *L. flavus* into one of *L. niger*, were attacked at first, but not for long. I then put some into a nest of *Formica sanguinea*, but these ants took no notice of them whatever.

On May 19th, 1908, I put five *Platyarthri* from a nest of *M. scabrinodis* into a nest of *L. flavus*. The ants attacked them, and the *Platyarthri* seemed reluctant to enter the nest, even when no ants stopped them. On returning a few hours later, I found three outside the nest, the other two not being visible. I put these three into the nest several times, but they came out again of their own accord each time, though the ants no longer took any notice of them. The next day they were still outside. I put one into a nest of *M. ruginodis*. It remained motionless while two workers examined it, and then left the nest.

Two *Platyarthri* from one nest of *L. niger* were put into another nest of the same species on May 9th, 1909, and were both attacked, one being carried some distance. The following day I saw an ant carry a dead *Platyarthrus* out of the nest.

The last case recorded was in November, 1909, when some *Platyarthri* were introduced from a nest of *L. flavus* into another nest of *L. flavus* and a nest of *L. niger* respectively. One was attacked for a moment by a *L. flavus*, but those put into the nest of *L. niger* were unmolested.

As a general rule I found *L. flavus* receive *Platyarthri* from nests of its own species, and from nests of *L. niger* and others, without taking any notice of them.

These small blind woodlice pass their whole existence in ants' nests, and when about to moult or produce offspring, are found in small cells of earth made in the walls of the nest, where they remain for some time, finally breaking their way out. I have never seen the *Platyarthri* actually constructing these cells, though I have seen the ants carefully plastering earth round them. In one case the ants buried the *Platyarthrus* so deep that I doubt whether it could ever have broken out without assistance. Two or three young ones are sometimes left by the parent sealed up in an earthen chamber after she has herself left it. On one occasion recently, I observed two fighting, butting one another with their heads, till the arrival of an ant separated them.

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### Notes on the Lepidoptera of the Scottish Highlands.

By DOROTHY J. JACKSON.

I am able this year to add a good many species to the list published at intervals in the *Ent. Record*, vol. xxi., and, as many of them seem to be unrecorded from such northern localities, perhaps the



following notes may be of interest. My best thanks are due to Prof. J. J. F. X. King for his kind help in the identification of a number of the micros recorded below.

My year's collecting began with an examination of the shoots of *Arctostaphylos uva-ursi*, which, interspersed with heather and whortleberry, cover large tracts of a moorland hill in this neighbourhood (Swordale, Evanton). I was rewarded with quite a number of larvæ, mostly fullfed, of *Coccyx nemorivaga*, each devouring the parenchyma of a leaf, which latter, in consequence, was swollen out to a bladder-like form. One could easily detect the presence of a larva by the withered leaves on a growing shoot which had been formerly tenanted by a larva, and were now connected with those more recently excavated by means of silken threads passed through a small hole from one leaf to another. The larvæ still continued to feed for a little time, and the first pupa I noticed—inside one of the bladder-like leaves—was on April 29th, and the first imago emerged on June 23rd.

In the end of March, a visit to some neighbouring cliffs edging a rushing mountain burn and overgrown in parts with clumps of wet moss and *Saxifraga azoides* produced several larvæ of *Larentia flavicinctata* (*ruficincta*), which, still very small, were easily shaken out of the saxifrage plants. I noticed the larvæ of this species again in the same ravine, where they seemed fairly common, towards the end of April, whilst searching for larvæ of *Brenthis euphrosyne* on the steep grassy slopes, where the leaves of *Viola canina* were just appearing above the withered bracken fronds. In this quest I was also successful, securing one or two larvæ by turning over the withered leaves near freshly eaten violet plants and in so doing accidentally dislodged an imago of *Pachnobia rubricosa*. The imagines of *Brenthis euphrosyne* were particularly abundant near Swordale this year (1909) and were to be seen flitting about in numbers in their favourite localities in the few days of sunshine at the end of May and beginning of June. The same weather brought forth *Phytometra viridaria* (all ab. *fusca*, Tutt), frequenting either the dry grassy slopes, where the bright little *Panocalia latreillella* abounded, or the sheltered heathy banks, the haunt of *Anarta myrtilli* and the much more local *Venilia macularia*. The latter I found here quite commonly in its very few favoured spots, always on some sunny slope in the neighbourhood of *Teucrium scorodonia*.

A light trap, placed near here in a wood of birch and aspen, attracted on the mild nights of April, such species as *Asphalia flavicornis* on the 9th, and *Taeniocampa populeti* on the 23rd. Owing to continued bad weather the trap was not lit very often during the summer, and the only moth captured of any interest was *Rusina tenebrosa* on July 11th. A short time spent beating in a wood of birch and sallow on the shores of Loch Maree on June 25th was rewarded, in addition to many common larvæ, with imagines of *Adela cuprella*, *Lithocolletis ulmifoliella* and *Hepialus hectus*. The latter was also taken a little later near Swordale. Other *Lithocolletids* observed here this year were *L. faginella* on May 30th, and *L. quercifoliella* on June 10th, and again on September 2nd.

The small birch trees which clothe in parts the banks of the ravine spoken of above, swarmed from the end till the middle of June with *Phloeodes tetraquetra*. The same locality produced on June 21st, two specimens of *Swammerdamia heroldella*, and one of *Penthina*

*sororculana*. Other species of the genus *Penthina* taken near here this year were *P. corticana*, several specimens of which on July 2nd—along with *Tinea oehlmanniella*—were readily disturbed by the beating stick from some small birch bushes growing on a sunny hillside amongst heather and whortleberry; *P. betulaetana* which on August 10th was beaten from small birch trees edging a boggy heath at Kincaig, Invergordon, *P. pruniana* which was a common insect amongst the blackthorn hedges in early June, and *P. dimidiana*, a specimen of which was reared on June 18th from larvæ feeding the previous autumn on shoots of *Myrica gale*.

Whilst collecting amongst the varied herbage of roadside and railway-bank in this neighbourhood during the few bright days of an exceptionally gloomy summer, I was rewarded with *Elachista apicipunctella* on May 28th, *Glyphipteryx fischeriella* on June 3rd, *Coleophora albicosta* on June 26th, *Cemistoma spartifoliella* on July 5th, *Lampronia rubiella* on June 24th, and *L. quadripunctella* on July 4th.

July 10th I spent collecting in a plantation of Scots fir on a neighbouring hill, and captured *Paedisca rubiginosana* and *Coccya cosmophorana*, the former beaten from the branch of a fir to resettle immediately on the ground, and the latter flying actively around the smaller trees in the sunshine. On the grassy slopes free from trees, I took *Acidalia fumata* and *Micropteryx seppella*. On the same day I beat several specimens of *Argyresthia ephippella* from a cherry tree in a garden near Swordale, where again some specimens were taken on August 26th. Of the other *Argyresthiids* observed around Swordale this year, *A. nitidella* was exceedingly common amongst hawthorn trees from July 22nd to October 1st, when a few worn specimens were still on the wing (this species was also taken at Aberfeldy on July 26th), *A. semitestacella* was beaten from beech on August 23rd, *A. albigaria* abounded amongst blackthorn bushes from July 21st to October 1st (also noticed at Lochearnhead on August 2nd), *A. conjugella* frequented the mountain-ash during July, *A. retinella* was beaten from birch on July 13th, *A. curvella* was beaten from an apple-tree on August 17th, *A. goedartella* and *A. brockeella* were abundant amongst birch-trees in July, *A. arceuthina* was beaten from juniper on July 4th, and *Cedestis farinatella* was taken on August 17th (also at Aviemore on August 6th), *Argyresthia sorbiella* was beaten from mountain-ash near Kingussie on July 25th with *Ornix scoticella*; in the same locality on July 24th I took a specimen of *Paedisca bilunana*, and the next day's collecting, also near Kingussie, produced *Hedya lariciana*, *Coccya distinctana*, and *Gracilaria alchimiella*, while *Tanagra atrata* seemed locally abundant amongst the long grass in waste places. I noticed this species again at Lochearnhead a little later, where also I took, on July 31st, *Sciaphila octomaculana*, *Depressaria liturella*, and *Argyrotoza conwayana* (the latter was also taken at Swordale on July 15th).

While staying at Lochearnhead, I was tempted to make an expedition up Ben Voirlich, and July 30th being the only day available, I started at an early hour to make the ascent, although the hills were veiled in mist. Nothing of interest was taken until the long grassy slopes of the mountain were reached—still considerably below the summit—and here *Scopula alpinalis* and, in lesser numbers, *Aphelia osseana* abounded, rising every here and there from the short rushes and grass at one's feet, flying for a short distance, and then resettling



on the dripping herbage. After continued climbing, when not far below the cairn, at what must have been an elevation of little under 3000 feet, I trod up a specimen of *Mixodia palustrana* from the *Vaccinium myrtillus* growing in a sheltered spot. Subsequent searching produced several more—rather dark richly coloured specimens—but they were loath to fly, even though the mist had cleared away and the sun was shining brightly.

August 5th I spent collecting on the hills on the south-eastern shores of Loch Rannoch, and was rewarded with one or two specimens of *Melampias (Erebia) epiphron* (I had previously taken this species in much better condition on a mountain in Glen Lyon on July 27th). They seemed to frequent chiefly the grassy spots which are often to be found near a trickle of water on a heathery hillside, and here they flitted gently about while the sun was shining. On the lower slopes *Emmelesia minorata* was readily disturbed from the heather, and in one favoured spot in an open pine-wood, by the shore of the loch, *Crambus margaritellus* was common, and easily disturbed from the long rushes, in company with *Glyphipteryx thrasonella*. On the next day I was pleased to capture four rather worn specimens of *Aricia astrarche* var. *artaxerxes* flying amongst rushes in a sunny meadow near Kinloch Rannoch.

The next interesting capture was *Erebia aethiops*, close to Loch Hulan, in Strath Bran, Ross-shire, on August 13th. Although the afternoon was cold and windy, without a blink of sunshine, I disturbed several specimens of this species from the long grass that was growing in a slightly damp open space in a wood of small birch-trees. They flew in a slow, heavy, undulating manner, but soon resettled on the tall grass blades, off which several were boxed with the greatest ease. Further on, in a similar locality, I noticed one or two specimens resting on a head of ragwort growing by the roadside.

The next day, spent at the North Cromarty Sutor, resulted in the capture of a specimen of *Agrotis vestigialis* resting near a rabbit-hole on the sandy cliffs, and several *Gnophos obscuraria*, which flew away in a lively manner when disturbed from the gorse bushes or the shelter of a rabbit hole.

Other species taken at or near Sworðdale in August were *Poecilochroma occultana*, *Peronea comariana*, *Lyonetia clerebella*, and at Kinersig, Invergordon—*Hydrocampa stagnata* on the 17th, *Æcophora fulvigitella* beaten from a sallow bush on the 10th, and, from a larva feeding on sallow in June, *Depressaria conterminella* was reared early in August.

During November and the early part of December beating the tufts of grass growing on walls, rocks, or the upturned roots of trees produced, in addition to other hybernating species, specimens of *Depressaria arenella*, *D. applanata* (in great abundance), *D. subpropinqua*, *Teleia humeralis*, *Gracilaria elongella*, *Coriscium sulphurellum*, *Cerostoma radiatella* (exceedingly abundant in suitable places and extraordinarily variable), and *Leptogramma literana*, one specimen of which was taken on November 16th.

In conclusion, the following specimens, taken during 1908 and 1909, may be worth recording for their respective localities:—*Agrotis nigricans*, a very dark and rather small specimen, reared in September, 1909, from a larva which was working havoc amongst the pansies in

the garden at Kincraig, Invergordon, in June; and from the same locality:—*Adkinia bipunctidactyla*, flying amongst marshy ground on August 10th, 1909; *Grapholitha nisella*, on September 23rd, 1909; *Paedisca sordidana*, on November 9th, 1909; *Tortricodes hyemana*, reared in March, 1909, from a larva feeding on oak the previous year; and *Atemelia torquatella*, flying over a boggy heath on June, 6th, 1908. At Swordale, the following were taken:—*Chortodes arcuosa*, on July 18th, 1909; *Harpiteryx xylostella*, reared on July 14th, 1909; *Gracilaria auroguttella*, first imago reared on May 27th, 1909, from pupa found during April in folded leaves of *Hypericum pulchrum*; *Coleophora laticella*, reared on July 14th, from a larva found dangling on a silken thread from the branches of *Pinus sylvestris*, on May 2nd, 1909; *Schrechensteina festalliella*, flying amongst heather and *Rubus chamaemorus* on the moor, on May 28th, 1908; *Gracilaria stigmatella*, taken in May, 1908; and *Micropteryx aureatella*, swept from *Vaccinium myrtillus*, on June 4th, 1908. During 1909 the following were taken:—*Ephippiphora trigeminana*, flying over waste ground near the sea at Tarbat Ness, on July 12th; *Swammerdamia pyrella*, reared on July 11th, from a larva taken at Loch Achelty, Strathpeffer, in the previous October; *Prays curtisellus*, Dingwall, July 5th; *Gelechia fugitivella*, Aberfeldy, July 24th; and *Bucculatrix demaryella*, beaten from birch at the Conon Falls, Strathpeffer, on June 23rd.

### Japanese Work on Dermaptera.\*

By MALCOLM BURR, D.Sc., F.E.S.

(I) Matsumura, S., and Shiraki, T., "Monographie der Forficuliden Japans" (*Journ. Sapporo Agric. Coll.*, vol. ii., pt. 2, pp. 75-86, figs. 1-3, 1905).

(II) Shiraki, T., "Neue Forficuliden Japans" (*Tr. Sapporo N. H. Soc.*, vol. i., pp. 91-96, taf. iii., 1905).

(III) Shiraki, T., "Neue Forficuliden und Blattiden Japans" (*op. cit.*, vol. i., pt. 2, pp. 1-14, 1905-6).

(IV) Shiraki, T., "Neue Blattiden und Forficuliden Japans" (*op. cit.*, vol. ii., pp. 103-111, 1907).

When a man buys a new motor car he does not enter for big competitions until he has learned to drive, for a knowledge of the functions of the various levers will not save him from accident until experience and practice have rendered manipulation instinctive. The mere possession of a new horse does not teach a man to ride, and if he enters for a jumping competition in an International Horse Show, he will probably come to grief, especially if his horse be difficult to ride. In the same way, the mere possession of a new monograph of any group of insects does not qualify the owner to be a systematist until he has spent several years in special study and familiarised himself with the degree of variation and relative value of the characters employed. Acquaintance, too, with the pre-existing literature is also an essential.

It is a plaintive lament of that great entomologist, Brunner von Wattenwyl, that the publication of his wonderful *Prodromus der europaischen Orthopteren* was the signal for the appearance of a flood of local faunistic lists of species, which were generally full of errors. But

\* This review appeared first in Russian in the *Revue russe d'Entomologie*, 1909, p. 335.



that *Prodromus* was so excellent a work that it contained its own cure, and this reduced to a minimum the mistakes of even inexperienced recruits. But de Bormans' monograph of the earwigs in *Tierreich* is not the same remarkable lexicon as Brunner's *Prodromus*. The worthy author was handicapped by the form of the work, by the prohibition of erecting new genera and describing new species, and even of bringing it up-to-date, for many species were omitted which had been described before his monograph was published. But the greatest obstacle lay in the fact that the sum total of our knowledge of the group was relatively so small; the number of known species has been nearly doubled since 1900, and so the monographer of that date had seen scarcely more than half of the species which we now know. It was, of course, impossible for him to construct a system with such meagre material, and it is highly creditable that he succeeded in producing so good a work as he did.

The inevitable consequence of its appearance was that many entomologists not unnaturally began to try to work out collections by means of this monograph. The most prominent was Dr. Verhoeff, who attacked the material in the Berlin Museum. This acute zoologist at once perceived the faults in the old system, which he ruthlessly swept away, but he offered little in exchange; he only gave us an outline of portions of a system. In the words of a well-known American entomologist, he built a new house, but only erected the doors and windows. His ignorance of the general literature and his lack of familiarity with the actual insects involved him in numerous errors.

In the same way, Japanese entomologists sought to do original work on this unsatisfactory foundation, and in the four papers quoted above, we find the result of their efforts. Before criticising, we must remember the difficulties under which they laboured; remote from the libraries and collections of Europe, out of touch with European workers, they could never have been familiar with the actual creatures about which they were reading, and so could not have been capable of appreciating the relative value of many of the characters employed by de Bormans, many of which, as time has since shown, are quite useless; such are the coloration of feet and antennæ, the development or abbreviation of the wings and the elongation of the forceps. Consequently we find the errors in their works are of two kinds, unavoidable and avoidable.

Among the more or less unavoidable errors, we may mention the failure to appreciate true generic affinities and ignorance of recent literature.

But the avoidable errors are more important; the greatest is the erection of new genera based on insufficient material. The genus *Mesolabia*, Shiraki (*supra*, III, p. 12), is based upon a single specimen, and what is infinitely worse, that one a female. It ought to be a recognised principle in systematic entomology, that no new species may be founded upon females alone; how much worse, therefore, is it to erect a genus upon such slender foundations. In Dermaptera especially it is fatal, for it is an unfortunate fact that, in many cases, not only specific, but even generic, characters are discernible in the male alone.

The second avoidable error is the description of new species without figures. This should be condemned in Entomology as it is in

Palæontology; the ideal is perhaps difficult of attainment on account of the expense, but outline illustrations are cheap, and are decidedly better than nothing.

A third avoidable error, and a serious one, is the poverty of general remarks upon the affinities of new species.

A fourth is the form of the descriptions, reduced to extreme conciseness on the model of those given in de Bormans' *Monograph*, where stress is laid on unimportant characters, valuable features being often overlooked.

We may now proceed to consider the four papers in order, dealing with the different species described.

No. I is a synopsis of the earwigs known to the authors to occur in Japan. It is interesting to learn that *Labidura riparia*, Haan, and *Forficula tomis*, Kol., are harmful to the silk growers, as they eagerly devour the larvæ; that *Apterygida japonica*, Borm., as well as *Anisolabis maritima*, Bon., is a coast-loving insect, and that both feed on dried herrings, and that *Labia yezoensis*, Mats. and Shir., is useful, devouring insects which damage leaves, such as *Cacaecia rosaceana* and *C. sorbiana*, which do great damage to fruit in Hokkaido.

The synoptical table of genera on p. 76 is adopted direct from de Bormans, whose arrangement of the innumerable forms of *Labidura riparia* is naturally followed by the authors.

We observe here for the first time that each species is credited with a trivial name; this leads us to wonder whether the Japanese peasants discriminate the various species of earwigs, or whether these are invented by the authors, on the lines of some of the egregious popular names of our British lepidoptera. They all appear to end with the word "hasamimushi," which is the name for *Anisolabis maritima*; *Ohasamimushi* is *L. riparia*; probably this simply means "earwig," the various prefixes being fancy epithets, as we see *Labia yezoensis* is called "Yezo-hasamimushi." *Labia yezoensis* is a new species of which the male is figured, together with the forceps of the female. In figure and description it appears to agree fairly well with *Spongiphora lewisi*, Borm. (*Ann. Mag. N.H.* (7), xi., p. 234, 1903), although the pygidium appears to differ somewhat. But it is a well-known fact that, in species where this organ is large, and specialised, its development varies to a considerable extent in different individuals. As *S. lewisi* was described two years before this paper appeared, the burden of proof lies with the latter authors, and it is pretty safe to assume that *Labia yezoensis* is a synonym of *S. lewisi* until the contrary is proved.

*Forficula tomis*, Kol., has recently been divided into two species by Semenoff (*Rev. Russe d'Ent.*, 1908, p. 166) who restricted that name to the Eurasian form, separating the Japanese stouter and larger insect as a distinct species under the name *F. robusta*, Sem.

*Apterygida japonica*, Borm., is now recognised as a true *Anechura*.

*Apterygida longipygi* (p. 84, fig. 2) is beyond any doubt whatever identical with *Forficula mikado*, Burr (*Trans. Ent. Soc. Lond.*, 1904, p. 319), under which it consequently falls as a synonym.

*Chelidura diminuta* (p. 85, fig. 3) is obviously immature; the description of immature specimens of fully-winged forms as new species, even as new genera, is a mistake not uncommonly made by Dermapterists whose experience has not been very extensive. To what species



this larva should be referred it is impossible to say; very likely to *F. mikado*. It is certain that it cannot stand as good.

No. II is a supplement to No. I, and, like that paper, is fortunately illustrated by a plate which, though not very clear, is still useful.

*Labidurodes nigrinus* (p. 91, fig. 1) is described as having the body robust, but the figure belies this; compared with the figure given by Dubrony of *L. robustus*, the type of the genus, it is decidedly slender; the appearance of the creature, and long, slim forceps, show that it is not a *Labidurodes*; it is probably one of the *Labiidæ*, and is very likely a good species. *Labidurodes formosanus* (p. 92, fig. 2) is described as a male, but the figure looks suspiciously like that of a female and is suggestive of *Chelisochidae*. It is recorded from Formosa, and so belongs to the rich Oriental fauna. Like the preceding, it is probably not a *Labidurodes*, but its true position cannot be suggested until the type be examined, nor determined until the male be associated with it.

*Anisolabis pallipes* (p. 93, fig. 3) has rudimentary elytra, and so we must place it in the recently-erected genus *Borellia*, Burr; no species of the genus has yet been recorded from Japan. The male is not known; it is probably a good species.

*Anisolabis fallax* (p. 94, fig. 4) is compared with *A. marginalis*, Dohrn. The writer of this notice possesses three species of *Anisolabis* from Port Hamilton, Tsushima, and "Japan" respectively, but is uncertain which to refer to the true *A. marginalis* of Dohrn, as he has so far had no opportunity of examining the type. *A. fallax* is probably to be referred to one of these. The points referred to by the author to separate it from *A. marginalis*, are mere distinctions, without being differences ("dunkler," "nicht heller," "aber deutlich duenner"), and so we have little hesitation in sinking it as a synonym.

*A. piceus* (p. 94) only differs from *A. fallax* in having 27 segments on the antennæ, instead of 16 (probably the others have been broken off in *A. fallax*). This is a valueless character, as these organs are very subject to damage, even during the life of the insect; it is not even known what is the normal number in the common *F. auricularia*, L. The other character lies in the unicolorous feet and antennæ. Whoever has handled many specimens of *A. annulipes* knows how untrustworthy this is. Consequently we sink *A. piceus* as a synonym of *A. fallax*, and therefore probably of *A. marginalis*.

No. III. This paper is unfortunately not illustrated, so we must struggle with the descriptions. As all new species described are from Formosa, this is the more difficult, the *Dermaptera*-fauna of that island being practically unknown; we may expect many of these new species to be good, but it is quite impossible to determine their affinities without seeing the types or receiving fresh material from Formosa.

*Labidurodes okinawaensis* (p. 7) is compared with *L. formosanus*, Shir. It may well be only a variety.

*L. singularis* (p. 8) is compared with *L. nigrinus*, but the pygidium is different.

*Forficula ruficeps* (pp. 8-9) is certainly not *Forficula ruficeps* of Erichson (*Arch. f. Naturgr.*, viii. (1), p. 246, 1842), which is an Australian *Nesogaster*; nor is it *Forficula ruficeps* of Burmeister (*Handb.*, ii., p. 755, 1838), which is a Mexican *Neolobophora*. From the description of the forceps, it seems to be a true *Forficula*, and is probably a

perfectly good species, but there are no remarks upon its affinities with any known form.

*Apterygida aeris* (p. 9) is described from a single female. As it is only in the male forceps that it is possible to distinguish the genus *Apterygida* from *Forficula*, we wonder why the author hit upon the former instead of the latter genus for its reception. It is impossible to even guess its affinities.

*Apterygida flavocapitata* (p. 10) is unfortunately not figured; from the description it appears to be a well-marked species. It is strongly suggestive of the genus *Timomenus*, and perhaps allied to *T. bicuspis*, Stål.

*Apterygida crinitata* (p. 11), from the undulation of the forceps, might well be an *Anechura*, or perhaps an *Allodahlia*.

*Mesolabia* (p. 12) is a new genus based upon a single female, and so must be unhesitatingly rejected. It is said to resemble *Labia*, but to have a less rounded penultimate ventral segment. In how many of the sixty or seventy species of *Labia* has the author examined this organ? The last dorsal segment is more exposed; this feature depends upon the distension of the abdomen; the last dorsal segment is sometimes well exposed in gravid females. The presence of the scutellum is suggestive of the *Pygidicraniidae*, as the author remarks.

The unique species is called *M. niitakaensis* (p. 112), its position is, of course, doubtful.

No. IV is also not illustrated. The specimens are all from Formosa.

*Labia flavoguttata* (p. 103) is described from a female alone, and its position is consequently doubtful.

*Diplatys flavicollis* (p. 104) is probably a good species. This genus is so difficult that a new species can hardly be arranged in its true position without a careful comparison of the type with a good authentic collection. De Bormans described half a dozen species, separated by colour alone; two dozen are now known, discriminated by structure, regardless of colour. Fortunately, the description of this new species is good; the subcontiguous conical forceps, inflated last dorsal segment, and amply subquadrate penultimate ventral segment (referred to as "letztes Sternit") suggests relationship with *D. liberata*, Burr, from Burma, and the African group of *D. raffrayi*, Borm., and *D. aethiops*, Burr.

*Taipinia* (p. 105) is a new genus, "akin to *Apterygida*." Unfortunately *Apterygida*, as understood by de Bormans, has been split into several genera, and most of the species removed to other groups, so this tells us little about *Taipinia*. The forceps are remote in both sexes, and the abdomen has four tubercles; this suggest *Eparchus*, though the single species, *T. pulla*, suggests *Anechurine* relationship.

I can find no reference to anything that might be *Anechura* (*Odontopsalis*) *harmandi*, Burr, or *A. lewisi*, Burr, neither of which appear to be rare in Japan.

All the papers are written in German; it is a pity they were ever written at all; there are Japanese appendices, which are probably translations; misprints are numerous.

#### RESUMÉ.

*Labia yezoensis*.—Perhaps = *Spongiphora lewisi*, Borm.  
*Forficula tomis*, Kol. = *Forficula robusta*, Sem.



- Apterygida japonica*, Borm.—Now in *Anechura*.  
*Apterygida longipygi* = *Forficula mikado*, Burr.  
*Chelidura diminuta*.—Unrecognisable larva; perhaps *F. mikado*.  
*Labidurodes nigrinus*.—Certainly not a *Labidurodes*; probably Spongiphorid.  
*Labidurodes formosanus*.—Probably a Chelisochid.  
*Anisolabis pallipes*.—A *Borellia*; ♂ unknown.  
*Anisolabis fallax*.—Perhaps a var. of *A. marginalis*, Dohrn.  
*Anisolabis piceus*.—Probably identical with above.  
*Labidurodes okinawaensis*.—Probably a var. of *L. formosanus*.  
*Labidurodes singularis*.—Probably a Spongiphorid.  
*Forficula ruficeps*.—Apparently a good species; new name required.  
*Apterygida aeris*.—Generic position unknown; ♂ unknown.  
*Apterygida flavocapitata*.—Perhaps a *Timomenus*.  
*Apterygida crininata*.—Apparently an *Anechura* or *Allodahlia*.  
*Mesolabia*.—A genus founded on a single ♀ cannot stand.  
*Mesolabia niitakaensis*.—Generic position doubtful; ♂ unknown.  
*Labia flavoguttata*.—♂ unknown; true affinities doubtful.  
*Diplatys flavicollis*.—Apparently a good species allied to *D. literata*, Burr.  
*Taipina*.  
*Taipinia pulla*. } —Apparently an Opisthocosmiid; perhaps = *Eparchus*.

### *Olophrum nicholsoni*, n.s., a species of Coleoptera new to Science.

By HORACE DONISTHORPE, F.Z.S., F.E.S.

Shining, reddish testaceous, occasionally darker, with elytra red. Depressed, and somewhat parallel-sided. Head triangular, red, with two black spots or blotches in front of ocelli, finely and distinctly, but variably, punctured; antennæ testaceous, slightly thickened at first joint, apex elongate, third longer than second, 4-10 not transverse, 11 about twice as long as 10, joints 7-9 being the shortest. Palpi long, darker than antennæ, the second joint being the longest, last joint pointed, about twice as long as third. Thorax transverse,  $1\frac{1}{2}$  times as broad as long, slightly more narrowed in front than behind, posterior angles rounded, finely and distinctly punctured, with a bare oblong spot on disc. Elytra parallel-sided,  $2\frac{1}{2}$  times as long as thorax, finely and distinctly, but diffusely, punctured, the punctures arranged more or less in rows. Punctures on scutellum variable. Hind body alutaceous, with a few very fine scattered punctures. Legs testaceous. Underside testaceous, metathorax smooth and almost impunctate, abdomen alutaceous, reflexed margin of elytra finely punctured. Length 4mm.-4.5mm. This species comes in the group with the posterior angles of the thorax rounded, and is nearest to *O. fuscum*, Grav. From the latter it may at once be known by its finer, more distinct, but diffuse punctuation. The antennæ are narrower, the third joint is slightly longer, joints 7-10 are a little shorter, so that the antennæ are about the same length in both species. The maxillary palpi are longer, second joint longer and more parallel sided, the apical joint being blunter, since in *O. fuscum* it is broadest at its base, whereas in this species it is broadest in the middle. The thorax is less transverse, and is more narrowed in front, and the side margins are less explanate. The bare patch on disc is more oval and more encroached on by the punctures. The reflexed margins of the elytra are more finely punctured than in *fuscum*, and the scattered punctures on the ventral surface of the abdomen are much less marked. The metasternum is smooth and almost impunctate, whereas in *fuscum* it is punctured and wrinkled. It is a brighter, and more parallel-sided species than either *fuscum*, Grav., or *piceum*, Gyll. The latter species is a larger, broader, and more convex insect; it is much more strongly punctured, and has much stouter antennæ and palpi.

As it was evident that this insect was new to us, I sent it to Capt. Claire Deville, who has returned it to me, and written that it is new to science. He possesses most of the known species. Moreover, I have compared it with all the species in Dr. Sharp's collection at the British Museum. It also does not agree with anything described in Herr G. Luze's excellent "Revision of the palaearctic species of the genus *Olophrum*" (*Verh. d. k. k. zool.-bot. Gesell. in Wien.*, 1905, pp. 33-47).

I have named the species in honour of my friend Dr. G. W. Nicholson. On March 19th last, we took several specimens at Wicken Fen under sedge-stacks and sedge refuse. The week after, Mr. Hereward Dollman took it independently in the same place in some numbers, and Dr. Nicholson and I have been again, and took 15 specimens, some 50 having been taken in all. It is remarkable that so distinct a species should not have been detected before. I must thank both Dr. Nicholson and Mr. Dollman for help with the description of the species.

### Variation of *Vanessa io*, L.

By T. REUSS.

Usually the white spots in the ocellus on the forewing of *Vanessa io*, are surrounded by violet scales of metallic lustre, blue metallic spots appear in the black marginal band, and a slight greenish suffusion may be found in the margin next the yellowish costal spot. Sometimes (most frequently in the males) the black marginal band is wholly suffused with blue scales, which leave only a narrow black margin uncovered (see *antea*, pt. 4, 1909, pl. vii., fig. 12, and *Entom.*, p. 311, fig. 3).

Last August I reared numerous specimens of *Vanessa io* from mostly wild-grown Herts' larvæ, which exhibited the following colour-aberrations: (1) With the normal violet and blue tints in the ocellus of the forewing, but both colours change to a most brilliant whitish-green = ab. *viridi-ocellata* (♀ emerging after nineteen days' pupallife), when the light falls on them at a suitable angle, (2) the normal colours almost entirely replaced by metallic blue, or (3) reddish-violet, or (4) bluish-green, or (5) silvery-white.

The hindwing ocellus usually violet-blue with two black bars joined transversely by a black projection (which occasionally reaches right across the ocellus), also changed in different ways, showing (1) one black bar (always the lower one, ab. *lucid-ocellata*), (a) with the transverse projection, (b) without the projection, (2) only vestiges of one black bar (ab. *splendens*) ♀ emerged after nineteen days' pupal life, (*Entom.*, 1909, p. 311, fig. 4).

In several specimens, the ocellus of the hindwing showed one, two or three white spots in the three blue interneural parts, which latter varied in colour, exhibiting—(1) Brilliant green-blue (in the hindwing ocellus belonging to ab. *viridi-ocellata*), (2) white-blue, (3) light and dark reddish-violet, (4) silver-grey. Specimens with faded grey instead of yellow markings along the costa of the forewings, and partially disintegrated ocelli have been distinguished as ab. *iocaste* and ab. *antigone*, but as forms which only result from the action of extreme temperatures (either from the heat of direct sunshine in the field, artificial heat or cold), and showing, therefore, chiefly symptomatic characters in their facies, these specimens are also characterised as ab. *belisaria* trans., for which aberration the excellent descriptive name ab. *exoculata* is a synonym.

About August 10th, and again on the 23rd and 26th, I bred a series of specimens, which emerged after 10 to 13 days of pupal life, all of which exhibited a very beautiful elongated forewing ocellus, suffused with greenish or blue and an abnormally dark rich ground colour with a black median fascia (ab. *nigrifasciata*, ♂) in the forewings, formed by a suffusion of black scales just over the position, where, on the



underside, the dark band common to all the "tortoiseshell" forms of *Vanessids* may be found. Together with these very dark forms and under the same temperature conditions (warm days and cool nights), I reared three large sized female aberrations (pupal life 11-14 days) which exhibited the exactly opposite tendency to develop very light colours. One emerged on the 10th August and two came out on the 24th. In all three the ground colour is a clear cinnamon-tinted orange (showing up conspicuously also in the centre of the ocellus in the forewings), there is an unusual amount of yellow along the costa, and the ocelli of all the wings are suffused with light violet, ab. *clara-violacea*.

In the coming season *Vanessa io* promises in this district (Munden, Ware, Herts) to be as common as it was last summer, if it be possible to judge by the number of hibernated specimens which may be now seen during a short walk in fine weather. On April 20th I saw two pairs of *Vanessa io* buffeting each other in the air over a spot at which evidently they had established themselves. The specimens settled repeatedly in damp places in the road and allowed me to approach my face to within half a yard of them. I noticed one clean or scratch its head with its right leg very energetically, and it repeatedly tapped the earth with a rapid movement of both antennæ—the yellow-tipped "clubs" touching the ground simultaneously—before unrolling its proboscis to suck up the moisture. The females evidently had not yet deposited their eggs. Finally three of the specimens were in exceptionally good condition, and one of the males exhibited the blue-banded perfect type of forewing ocellus, but the ocellus of the hindwings was nearly black, containing only five separate violet-bluespots. Specimens with a perfectly clear, bright blue hindwing ocellus, crossed once only by a deep black bar and short black projection without any other black suffusion (ab. *luridocellata*) seem to be rare in the field. Even among the more than two thousand specimens which I bred and examined last August, there were not many complete specimens of this kind.

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### A Tramp Across Corsica.

By P. A. H. MUSCHAMP, F.E.S.

Seven years ago I passed my Easter holidays in Corsica and was so enchanted with the perfume of the "maquis," and with the simple hospitality of the good people, that I have often wished to pay a second visit to the "island of unrest." As nothing hindered me from spending my short Easter holiday wherever I might feel inclined in this year of grace, I found my way to Bastia by way of Leghorn and decided to use shanks's mare as a substitute for the little yellow Corsican pony that had consented to trot me over the country on my last visit. As the weather was not yet warm enough to admit of my going off inland—for inland means highland—and as one cannot very well walk where there is a train running by one's side, my young companion and I took the train as far as it goes along the coastline towards the south, to a little village called Ghisonaccia, just fifty miles from Bastia, where we lunched and then started off on our tramp. Corsica is so very thinly populated that one has to be very careful not to aim at a too distant village, for though quite sure of a most hearty welcome anywhere, villages are very few and far between, and it is unusual to find any roof tree between one village and the next.

On our first afternoon's tramp, which was one of fifteen miles, we only passed a single tiny hamlet where the inhabitants were all assembled round the one oven preparing Easter bread and cakes. The ovens in this country are all of them built at some little way from the houses and resemble nothing so much as a big heap of stones. It is the custom for the several families of the tiny communities to take it in turns to cook and to bake. We were forced by the good people of this tiny little hamlet of Casamozza to taste their bread and cakes which were terribly stodgy sweet things, made chiefly of chestnut flour. They also insisted upon our carrying some of their bread away with us (fortunately dogs swarm in Corsica and eat this bread ravenously). Near here I picked up my first butterfly, *Pararge megaera* var. *tigelius*. There were a fair number of them flying by the roadside and they were in excellent condition; farther south a good percentage of the *tigelius* were too worn to be worth carrying away from their island home. We spent our first night at Solenzara, a hamlet situated in a forest of eucalyptus trees, whose penetrating smell in this and in many other villages overpowers the strong scents of the maquis or undergrowth of lentisk, giant white heather, strawberry trees, myrtle, rock-roses, lavender, and fern, which covers the entire island, except where there are forests of cork and other evergreen oaks, of maritime pines and larches. The greater part of the Corsican coast-line is uninhabitable after the first fortnight of May, but where the eucalyptus trees abound they act as a counter-poison to the malaria fraught marshes. At Solenzara one may stay with little risk in the very hottest part of summer. From Solenzara we strolled the next day—Easter Sunday—to Sta. Lucia, only fifteen miles off, and managed to take the whole day over it. On the road I netted a goodly number of *tigelius*, as many *Pararge egeria*, a couple of *Rumicia phlaeas*, and two or three *Orgyia corsicum*. Along the roadside were different kinds of evergreen prickly-leaved oaks and around these *Celastrina argiolus* swarmed, the males rather worn, the females very fresh and extremely busy ovipositing here, there and everywhere on leaves, stalks, and twigs. A smaller number of *Callophrys rubi* bore them company and these two Ruralids were the only members of the superfamily seen in Corsica this spring, but these, indeed, remained with us during the whole of the trip. After a good swim in the deep blue sea (deep refers to the colour) we felt very hungry and consulted the map to find out where we were and where we could find food. To our astonishment we found that we were not more than four miles from Solenzara and that we had quite twelve miles before us to get to the next village, Sta. Lucia. Rather than return to our last night's shelter we decided to tramp on hungrily as far as Sta. Lucia, if necessary, and our courage was rewarded a mile or two further on the road by the welcome sight of a house, or rather of a wretched shanty. I stepped boldly into this abode of man and found a poor fellow in bed ill and half a dozen children playing about the one room in which they all lived. The place looked clean enough and we were fearfully hungry, so we demanded food which we elected to eat outside, and we were soon provided with eggs, bread (made of chestnuts), sheep cheese and water. We ate very heartily, and as our host was evidently so extremely poor, I ventured to beg him to let me pay for my entertainment. Alas, I only succeeded in changing the good man's cordial hospitality into polite



standoffishness. I satisfied my conscience however by persuading the two youngest girls to accept a franc apiece, which was doubtless very immoral of me. A few yards from this cottage I saw, but did not get near to, a fine *Papilio hospiton* that flew calmly across the road in front of me and sailed away over the maquis that was here some ten or twelve feet deep, and quite impossible to swim through. While looking for another on the slopes running down to the sea, I picked up a couple of *Pontia* var. *bellidice* and a *Colias edusa*, and then further on a few *Gonepteryx cleopatra* ♀s ovipositing on barberry bushes, and some ♂s, far harder to net, as they rushed up and down over the maquis, burying themselves deep in great white heather bushes that were twelve feet high, disappearing just when I was surest that I had correctly stalked one, and reappearing just out of reach of my net the moment I had made up my mind to give it up and make a move in the direction of supper and bed. At Sta. Lucia we received a hearty reception and some excellent wild boar steaks—our host had been out gunning the day before. I might mention here that the cost of an excellent dinner of six or seven courses, with wine, coffee, liqueur, and cigar, is only two francs in the Corsican villages. From Sta. Lucia to Porto Vecchio is only ten miles by the high road, but by way of the seaside and the crosscuts and short cuts, we made a long day's walk of it (short cuts are wonderful things), lunching on wild boar from Sta. Lucia by the seaside after a pleasant swim. After luncheon I was fortunate enough to take five *Papilio hospiton* flying over the maquis close to the seashore in a place where wild carrot was abundant; this beautiful swallowtail however settles on the gaudy agave and other flowers, and I have not found any female hovering over the foodplant, though they are never very far away from it. On my last visit to Corsica I had found *P. hospiton* very hard to catch, as it was flying on a hilltop in a regular gale of wind, this time I found that its flight is very similar to that of *P. machaon*, and is quite as easy if not easier to net. We were well rained upon for an hour before reaching Porto Vecchio, so were very glad to let the kind-hearted landlady of the tiny little tavern, which calls itself the "Hotel de France," mother us to her heart's content and to our body's recomforting. The next day we tramped on after seeing all that the old village, once an important town, has to show. After following the road for about ten miles with nothing more interesting than *Pieris brassicae*, *Pararge* var. *tigellus*, *P. egeria*, and *Oclastrina argiolus*—most of them hens—to animate the landscape and flirt with the rock-roses, we struck off to the sea for a bathe, knowing by the map that we were now near a place where we could feed. We bathed, and tried to take a short cut across the maquis back to the road, and found ourselves landed up to the middle in freshwater marshes; after half an hour of this, we luckily happened upon a goatherdess, a maiden of about eighteen years of age, fair as an early summer dawn, and wearing the happiest smile it has ever been my lot to see. She knew no word of French, but in reply to my Italian, she spread out on the myrtles the skirts she had been washing, and bare-legged ran by our side through the maquis that scoured our well-clothed lower limbs, and which seemed to her a very Turkish carpet. Thanks to our fair guide we soon struck the high road and got to a house, the house. I ventured into the bar, nobody there, hunted up the kitchen, nobody there, went upstairs, found on one side of the landing of the

upper story a schoolroom, and on the other a bedroom. My loud shouts being quite useless, I returned to the bar and mixed refreshing drinks for my companion and myself. Gaining strength, like giants refreshed with lemon squash, we now shouted afresh, and managed to attract the attention of the school marm and the school marm's father, who had been somewhere in the maquis near at hand, and who now did their best to make us feel at home. After feeding, I struck up into the hills rising behind the house, and very much troubled some peasants who followed me to assure me that it was impossible to get through the maquis and over the rocks. All I managed to net in this wild spot were a dozen *Polygonia c-album* and two *Codonia pupillaria* of a brick-red colour. Returning to my schoolhouse inn I rejoined my companion, and decided to take the automobile that runs into Bonifacio every day since some six months ago. We waited patiently and long for the said motor, which ultimately turned up three-quarters of an hour late, as it had been retarded by a bandit, who unfortunately happened to be an enemy of progress, and had held up this forerunner of civilisation, its two conductors, and a round dozen of tourists, commercial travellers, and in-the-movement-Corsicans, ordering them from behind his well-directed gun to go back, and go back they had been obliged to, till this very conservative gentleman had gone on his way elsewhere. Well, we got safely into Bonifacio, which is just as dirty, picturesque, and fourteenth century-like as it was seven years ago, in spite of the wonderful motor-car service a political intrigue has endowed it with. We visited the fort, where we had spent an hour before one of the French piau-pious (Tommies) noticed that I had brought my camera in with me and had innocently used it. Next day we left on foot, and made our way to Pianattoli (thirteen miles), the only new butterfly I took on the way being an example of *Iphiclides podalirius*. I was attracted to Pianattoli by the memory that on my last visit to Corsica I found many *Papilio hospiton* flying on a little hill there, but alas the weather, which had been perfect, changed, and after lunch we found that the sky was clouded over and no butterflies flew at all. A single *P. hospiton* was all that my little hill gave me for my trouble, and not even a single commoner was bagged. While waiting for dinner and the motor to come, I watched from the hotel (?) window a number of children playing in the road, and threw some sous to a number of little ragged boys who were larking about in the dust; they at first picked up the sous, then put them back on the ground just where I had thrown them, and an hour later, when I left, I found the poor despised coppers where I had thrown them.

Starting from Pianattoli after nightfall, we had a pleasant ride to Sartène in the motor-bus, only stopping on our way to remove a log of wood that had been carefully laid across the road by some playful objector to indiscriminate innovations. Sartène is charming, but there is really too much talk about politics going on in it for the man in the street. We visited Sartène next day, and then did a goodly walk on to Bicchisano, 24 miles nearer Ajaccio, stopping at the little port of Propriano and the charming little eagle's nest called Olmeto on the way. The only new thing seen on the way, was one pupa of *Charaxes jasius*, the only representative of the butterfly I came across in Corsica, though I hunted several hundred *Arbutus unedo* bushes through and through, and glanced casually at several thousand.



The following morning we decided to take the coach all the way to Ajaccio, but on arriving at Sta. Maria Siché, discovered that the places were all taken from there onwards by a party of officers; they had also hired all that the country could produce in the way of traps, carts, and horses, so we were compelled to make the best of our way on foot to Ajaccio. Twenty-two miles is quite enough for an afternoon's walk, especially when one starts very late, and two very weary people at last arrived in Ajaccio to an all too late dinner, after having been obliged to waste a whole hour with a couple of French gendarmes, who arrested us on suspicion because my young companion is a hater of head-gear, and I was bearing a box of butterflies around my neck and had a camera with me, clearly proving to these Sherlock Holmes that my bright-faced English companion was an escaped prisoner, and that I was a government spy! While discussing things with these gallant gentlemen, I was fortunate enough to net a *Powellia sao* var. *therapne*, which rather consoled me for the waste of time and temper. *Pyrameis cardui* was abundant all along the dusty road, and there was an occasional *Vanessa io*, but not a sign of *Aglais* var. *ichnusa* did I see in any form or shape, though, and for the first time, I saw very many of the dark-coloured Corsican nettles by the roadside. For the first time on our walk we came across a little tract of country which seemed to have undergone some rough attempts at cultivation, and I presume that that is why nettles were plentiful.

*Pararge* var. *tigelius* was here going over, not more than one in four of those that I picked up was worth keeping. Its flight, so far as I could judge, is a trifle less jerky than that of typical *P. megaera*, but quite jerky enough to make it an easy thing to lose in the maquis. Fortunately, from an entomologist's point of view it has a particular affection for the roadsides and the bare spots in the unending maquis. It very rarely settles on flowers or shrubs but squats down on the bare spots, doubtless winning a colour protection. Its ground colour varies very little, I have only one example with hindwings slightly paler, a mild form of albinism. The ♀s are rather larger than the ♂s, the difference however is slight, out of 160 butterflies the largest ♀ is 20mm. in the expanse of the forewing, and the smallest ♂ 17mm. The eyespots on the hindwings vary in number, I have examples with one, two, three, four, five, and six spots, a large majority of them however have four spots. The spots on the upper wings vary in a very interesting way which is worth giving in detail. Almost every eyespot is white pupilled. Out of 34 ♀s 16 have one spot above the large single apical one, four have one spot above a double-pupilled apical one, four have one spot above and a second below this double-pupilled one, two butterflies have two eyespots above the single and two above the double-pupilled apical spot, three have one above and one below the single-spotted apical, two have a single-pupilled and one a double-pupilled apical with two spots above and one below. The ♂s vary still more, perhaps only because I took more of them. Out of 126 butterflies 90 have apical spots with one, 32 with two, and four with three pupils. Of the former, 74 have only one eyespot above, 12 have two, three have two above and one below, and one has none either above or below. Of the two-pupilled 18 have one spot above, six have none, four have two above and four one above and one below. Of the three-pupilled, three have one additional spot above and one below. It is

evident that the commonest form has only one spot above the large apical spot and none below; out of the whole number of 160 there are 115 of this form. It will be remarked that the corresponding form of *alberti* is fairly common in *tigelius*, and there is also a form which has a three-pupilled apical eyespot, caused by the extension of the principal double-pupilled spot till it unites with the spot above in such a way that the black has the form of an English cottage loaf. I think it deserves a name of its own and propose to call it *triopes* (n. ab.). In addition to the *tigelius* described I took a perfect gynandromorphic one at Porto Vecchio.

My tramp across Corsica terminated at Ajaccio as from there to Bastia we hurried back by the train, anxious to get home news and fresh linen, two luxuries we had been obliged to forego.

## SCIENTIFIC NOTES AND OBSERVATIONS.

NEW GYNANDROMORPHIC BUTTERFLY.—PARARGE MEGAERA VAR. TIGELIUS.—I believe I am right in stating that no gynandromorphous example of *Pararge megaera* var. *tigelius* has been recorded up till now. I was fortunate enough to net one on March 27th, at Porto Vecchio. This butterfly has the left wings and abdomen ♀, the right wings ♂. The two forewings are of exactly the same length, the ♂ wing being, however, rather narrower; the ♂ hindwing is 1mm. shorter than the ♀ and narrower also. The forewing displays the normal dark bar, which is of course wanting on the ♀ wing. The eyespots are the same in number on the ♂ and ♀ wings, but rather larger on the ♀.—P. A. H. MUSCHAMP, F.E.S., Stäfa. April 26th, 1910.

## NOTES ON COLLECTING, Etc.

THE LATE SEASON.—The cold winds and wet seem to have delayed insects somewhat. A very hot sunny day at Folkestone, May 15th, only showed an abundance of *Pieris brassicae*, several *P. rapae*, a single *Celastrina argiolus*, two *Nisoniades tages*, and two or three ♂ *Epichnopteryx pulla* flying on the chalk banks at Folkestone. A search of the heads of *Tussilago farfara* showed that most had been vacated by the larvæ of *Platyptilia gonodactyla*, although some quite small and other fullfed larvæ were detected not yet scattered for pupation. On the next day, still hot and sunny, at Hythe, several *Celastrina argiolus* of both sexes were seen in the town and by the side of the canal bank, but no other freshly-emerged butterflies, except the two Pierids. A few *Aglais urticae* were observed both at Folkestone and Hythe, but no other hibernators.—J. W. TUTT, Westcombe Hill, S.E.

LEPIDOPTERA AT STROOD.—How backward the season appears to be! A run to the Medway marshes after larvæ on May 16th, produced only a few Leucaniid larvæ about three-quarters grown, some of which, I hope, will produce *Leucania favicolor*. The most surprising capture to me, however, was that of two ♀ *Taeniocampa opima*, new to this district, as far as my experience goes.—J. OVENDEN, Frindsbury Road, Strood, Kent. May 17th, 1910.

## CURRENT NOTES.

The overwhelming grief of the nation at the sudden and unexpected death of His Majesty King Edward VII. has necessarily put all social functions out of the question. Among other postponements is that of the



Conversazione of the Entomological Society of London, notice of which we regret to say came just too late for us to notify in our last number.

It may not be generally known that King Ferdinand of Bulgaria, who was present to pay the last sad homage of dutiful respect to the memory of His Majesty, is an entomologist of great ability, although with little leisure of late years to prosecute the work. He has a considerable collection—to which was added a large part of the Millière collection at the death of that renowned lepidopterist.

Mr. E. R. Bankes adds a new Tortricid to the British list. This is *Enarmonia (Eriopsela) ericetana*, H.-Sch. (not to be confused with *Epiblema ericetana*), which was first captured by Canon Cruttwell at Aviemore in June, 1907, and again by the Canon and himself at the same place, in the latter half of June, 1908. It is closely allied to *E. quadrana*, and the imagines are to be beaten out of aspen (and more rarely birch) by day, the natural time of flight being from 4.45 p.m. onwards.

Mr. F. C. Woodforde describes a new form of *Ephyra pendularia*, bred from N. Staffordshire-reared parents, with the central portion of the forewings ochreous, as ab. *subochreata*.

The most important volume that has been offered to the orthopterists of Europe for a considerable time, is Dr. Burr's *Synopsis of the Orthoptera of Western Europe*. It is a systematic work with short detailed descriptions of every species occurring in Europe this side of the Carpathians, with notes on habits and habitats, and giving the distribution of each species so far as known, often in considerable detail. The Tables of Genera and Species are most useful, short, simple, and easily followed; indeed, the book reminds us as much of Stainton's *Manual* as anything we know. The book contains further revised classificatory lists of the DERMAPTERA and BLATTIDEA, with an excellent Index. It is strongly bound in cloth, consists of 160 pages, and is not too large to be placed in the travelling bag as part of the impedimenta of the collector on the war path. The book will no doubt prove as useful to the orthopterists of France, Belgium, Holland, Scandinavia, Germany, Austria, Switzerland, Italy, Spain, and Portugal, as to those of Britain, and even if the orthopterists of Russia and the Balkan States, do not find all their species mentioned, the bulk of those that are essentially European and not Asiatic in their origin, will be found here. At the price of 3s., the book ought to sell freely, and, as we understand there is only a comparatively small edition, entomologists who have only a passing interest in the orders, would do well to get a copy, whilst libraries should obtain their copies without delay. We say this advisedly, knowing how difficult it is after a time to obtain books of which only a very limited number is put on the market. The volume is published by the well-known entomological booksellers, Oliver Janson and Son. It is, we understand, the author's sincere hope that lepidopterists and coleopterists on collecting trips in Europe, will add this to their bag, so that they may identify any captures that come their way, and thus add to our knowledge of the distribution of these interesting insects.

We are afraid we did less than justice recently to the energy of those responsible for running the Rugby School Natural History Society, which has just issued its *Report* for 1909. Considerable praise is due to Mr. R. B. Henderson, President, Editor and guiding

spirit of the society at the present time, as well as co-secretary with Mr. P. A. Buxton of the Entomological Section. When one looks round the active members of the Entomological Society of London, and recalls the fact that several of its most prominent Fellows are old Rugbeians, one wonders why several of them do not appear on the list of Honorary or Corresponding members of the Society. We see Canon Hutchinson, Rev. F. D. Morice, Dr. Longstaff, and others, but where are the names of other equally well-known Rugbeian entomologists. Mr. Hutchinson must fix some of these up for lectures next year—busy as they are. It is always busy people who make most time. There are some good papers in the *Report*—Mr. E. O. Webb's on "Dragonflies," shows considerable promise, and the illustrations are most useful—but why, oh why, has he let through the statement that "true ants are flies, of the order Diptera"? Of course, it is a howler to the making of which we are all subject. Mr. P. A. Buxton's notes on "Lepidoptera in Jamaica," are useful, whilst the notice of the Exhibition, the Report of the Entomological Section, and the Observations and Captures of Lepidoptera in the Rugby district in 1909, are all interesting. We would suggest that the report would run better if the specific names were written in small letters, if the generic names were written in full, and general terms, such as Lycænids, Urbicolidids, Sphingids, etc., were kept in ordinary type. There is much hard work connected with the keeping together of a School Natural History Society, the members of which must, of necessity, always be changing, and where the officers must see year by year the products of their energy pass out of their immediate ken into the wide world of science, but this must never be a matter for regret, but must be looked forward to as the natural course of events, the end that the society exists and works for. One suspects that the Marlborough Natural History Society is still in existence, but what has become of the Winchester Society, erstwhile one of the most go-ahead of all the Natural History Societies attached to the public schools? We must congratulate the Rugby School Natural History Society on its continued success.

## SOCIETIES.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY.—April 28th, 1910.—CAPTURES OF RARE LEPIDOPTERA.—Mr. W. West (Greenwich) exhibited numerous rare and interesting specimens taken mainly by himself forty or fifty years ago. Many were of local interest to entomologists of S.E. London. Included were *Pontia daplidice* (Folkestone), *Agrius convolvuli* (Greenwich Park), *Hippotion celerio* (Greenwich), *Deiopeia pulchella* (St. Margaret's Bay), *Spilosoma urticae* (Greenwich), *Aegeria cynipiformis*, and *A. myopaeformis* (Greenwich), *A. culiciformis* (Darent), *A. ichneumoniformis* (Lee), *Colias hyale*, *C. edusa* and var. *helice* from the Brockley railway banks. ANTHROCERIDS.—Mr. R. Adkin, specimens of *Anthrocera*, including the example supposed to be a hybrid between *A. achillae* and *A. filipendulae* and stated that an examination of the genitalia by Mr. Pierce had shown that the example in question was the latter species. DARK-BANDED AMPHIDASYS STRATARIA.—Mr. Sperring, specimens of *Amphidasys strataria* bred from ova and having extremely dark bands. LEGS OF LEPIDOPTEROUS LARVÆ.—Mr. Sich read a paper on this subject.







*Photo. A. E. Tonge.*

ABERRATIONS OF *SENTA MARITIMA*.

*The Entomologist's Record, etc., 1910.*



**Aberrations of *Senta maritima* (with plate).**

By H. M. EDELSTEN, F.E.S.

The interesting specimens of *Senta maritima* exhibited in plate vi were taken in the Isle of Wight last August by Messrs. Prout and Capper. The photograph shows clearly the peculiarities of the first and second specimens. The third specimen is a combination of the aberrations *bipunctata* and *nigrostriata*. I have only once seen another, and that was taken in the Norfolk Broads. Mr. Capper suggests the varietal name of *combinata* for this form. The date of capture, August 9th, seems to me to be exceptionally late for the species, though Mr. Prout tells me they took a good number. I have always looked on it as being over by July 20th, though I once took an odd specimen on July 31st. Mr. Tutt says that on the Cliffe Marshes he considered it a June rather than July insect, and that August appears to him also to be remarkably late.

The photo is by Mr. Tonge, enlarged by 2.

**The Lepidoptera of the Vorarlberg—St. Anton and the Arlberg Pass—the Moostal.**

By J. W. TUTT, F.E.S.

The tourist entering the Tirol, and approaching Innsbruck, its capital, by train, does so by the Arlberg route, leaving the main Zürich-Engadine line at Buchs, and crossing the valley of the Rhine into the Vorarlberg, as far as Feldkirch; here the valley of the Ill is entered, the route passing along the valley as far as Bludenz, where it diverges into the Kloster-thal watered by the Alfenz, which it finally crosses above Langen, plunging into the Arlberg tunnel, somewhat over  $6\frac{1}{4}$  miles long, emerging on the other side at the little village of St. Anton, the highest in the Rosannathal, and beautifully situated; the part of the valley above the village is known as the Fervall-thal, and below it the Stanser-thal. The village is surrounded by moderately high mountains and the country around is all good butterfly-ground, although the weather would not let us fully test it in this direction. Arriving there about noon on July 30th, a glance round at the end of the afternoon promised well, as there seemed an abundance of species quite near the village, but the sun soon went off the banks and the butterflies, as usual, disappeared as by magic; the next day the 31st was dull and chill and a long swinging walk up the Arlberg road was the best thing that could be done, but the morning of August 1st broke delightfully warm with a delicious air that set every fibre of the body on the move. A fairly early start was made for the summit of the Arlberg and ere long the net was occasionally and usefully at work. In the pinewood some few kilometres above the village, *Erebia ligea* was in good condition, but many *Aporia crataegi* produced nothing better than worn ♀s, the centre of the wing nearly or quite transparent, whilst from the rocks *Dasydia obfuscata* flew off in abundance. *Eubolia mensuraria* was equally common, and on the pine-trunks a fine banded race of *Larentia caesiata* was not at all infrequent. A few worn *Plebeius argus* (*aegon*) showed that this species was over, whilst a quite hopeless specimen each of *Hesperia*

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*malvae* and *Nisoniades tages* showed that these species had been on view there. Pushing along the road several specimens of *Hesperia alveus* were captured and, in one place, *Coenonympha satyrium* showed up on the banks by the roadside. *Agriades coridon* was comparatively scarce, as also was *Polyommatus icarus*, more abundant being *Aricia astrarche*, the examples mostly small-spotted beneath, of marked *discreta* form in both fore- and hindwings, and tending also to the *obsoleta* form in the absence of spots 6 and 7 of the submedian series of the forewings and the absence of some of the basal spots as well as some of the submedian in the hindwings. Two somewhat worn ♂ *Polyommatus hylas* also showed very small spots on the underside of the hindwings, whilst most of the examples of *Cyaniris semiargus* were worn and were also of the obsolete form, several being referable to the intermediate form *caeca*, and a single one to the extreme form *spadæ*. Here and there, on the footpath, one came across *Ennychia cingulalis* and *Pyrausta purpuralis*, whilst *Crambus pratellus* and *Merrifieldia tridactyla* (*tetradactyla*) were not uncommon by the roadsides. *Melampias melampus* was the only really common Erebiid in the earlier part of the walk, though later *Erebia tyndarus* and *E. euryale* became abundant enough, and several *E. stygne* were taken, whilst a solitary *E. pitho* was also observed. Of the larger Argynnids, *Argynnis adippe* was only occasionally met with, but *A. aglaia* of good colour, the ♀s tinged with deep blackish-purple (*purpurascens*), was not uncommon, whilst *Brenthis amathusia* varied considerably in condition, some being quite worn to shreds and others quite presentable, a remark that might also be made of *Pararge maera*. In one place *Melitaea athalia* came down to the roadside, mostly recently out and in fine condition, skimming just over, or settling at, the wet spots on the road. A single worn *Lycaena arion* showed this species to be quite over. Three Anthrocerid species were observed by the way—*Anthrocerus transalpina*, *A. lonicerae*, and *A. purpuralis*, all quite fresh and recently emerged. Two examples of *Loweia subalpina*, ♂ and ♀, alone were observed of this species. The long grind upwards to the summit was amply repaid, for the steep slopes to the east of the top of the Pass, almost directly opposite the hospice of St. Christoph was a brilliant picture, covered with dense tangled thickets of "alpenrose" in full blossom, acre upon acre, a most lovely sight and indicating the lateness of the season here. High up these slopes a huge water-spring wells out of the side of the mountain, dashing wildly down over a rocky bed thickly edged with great bushes of alpenrose, in the full glory of their rich crimson flowers. Whether or no this is one of the head-waters of the Rosanna we do not know, but it apparently must be as there seems to be none higher on this side of the pass. Here and there near the upper part of the stream, small, flat, swampy patches spread out, sometimes on one side, and then on the other, and then the bed suddenly slopes downwards in a thicket of dwarf alder and alpenrose. By the side of the stream, sometimes nearer, at other times at a greater distance, a path could be picked, often with difficulty, and occasionally one had to let oneself bodily over the boulders, but this we heeded not, for it was a favourite haunt of *Brenthis selene* and *B. euphrosyne*, the first abundant, the latter going over and long past its first prime; whilst, on the swampy patches, *Brenthis pales* was not uncommon. It was a new experience to us to find these three allied species flying together,



and this locality, at an elevation of about 6500 ft., must be a very bleak spot during the greater part of the year, for large snow-patches still lay here and there below us, and this delightful day might well have been believed to have been a chosen day of June rather than early August. Here, high above the highest point of the Arlberg Pass, we sat and ate our frugal lunch and drank the water where it bubbled madly out of the ground, and here among the Brenthids where an occasional *Colias palaeno* or *Pontia callidice* crossed our path, we spent the loveliest afternoon of the summer holiday of 1910. To see either *Brenthis selene* or *B. euphrosyne* with wings outspread, on the alpenrose flowers, in the hot early afternoon is a sight not soon to be forgotten. Why *Brenthis selene* is one of our favourite species we cannot say, unless it be that the species has always been almost wanting in our collecting-grounds in Britain, but such is certainly the case and probably affords the explanation. About 3 p.m. the tall peaks commenced to send their long shadows over the slopes and we began to descend, not before, however, *Anthrocera exulans* and *Nemeophila plantaginis* had fallen prey. *Crambus coulouellus* and *C. perlellus* were found somewhat abundantly, whilst *Acidalia fumata* and *Melanippe hastata* were also occasionally observed, and *Erebia lappona* and *Melampias epiphron* were frequently noticed as one traversed the marsh to the road, whilst, on the slopes of the mountain on the other side, the latter was seen flying abundantly as we walked slowly back towards St. Anton. Lower down, a single worn *Colias hyale* suggested that we were between broods. Over the banks and heather-clad wastes, a little later, *Emmelesia adaequata* (*blandiata*) flew abundantly in its quiet manner, the ♀s seeking out the eyebright for egg-laying.

Next morning a walk through the Moosthal was projected, but the weather looked none too promising. Keeping by the river, the first waste bank beyond the cottages proved a source of great pleasure. *Anthrocera purpuralis* was just over, but hundreds of newly-emerged *A. lonicerae* hung on every blossom, or stood on every upright stem, whilst brilliant *A. transalpina* and *A. filipendulae* were also just coming out. *Agriades coridon* was in great abundance and we were able to make observations on the pairing-habit, already published in *A Nat. Hist. of the British Butts.*, iv., p. 88. Hundreds of *Chrysophanus hippothoë* and a few *Heodes virgaureae* disported on the bank, but the former were very worn the latter quite fresh. *Brenthis amathusia*, too, was abundant, and we observed that *Epinephele ianira* was just emerging. Both *Erebia ligea* and *E. euryale* occurred on the same ground, a few ♀s of the former being of good colour. *Argynnis adippe* was much more abundant here than *A. aglaia*, and *Pararge maera* swung swiftly to and fro as it took possession of the waste places on the bank. *Hesperia alveus* was also common and *Tanagra atrata* (*chaerophyllata*) hung on the grass blades in great numbers. Hustling into the flower-heads was *Leucania conigera*, at St. Anton, as at Deal or Cuxton, bustling after nectar in the hottest sunshine, *Aricia astrarche* was also abundant, the spotting on the hindwing of some specimens of the *obsoleta* form, whilst *Polyommatus icarus* gave a fine lilac-blue ♀, with dark margin to forewing and with orange red spots on hindwings only, a form common enough in England but not so frequently taken in its Continental

haunts. A single fine ♂ *Polyommatus hylas* was the only representative here of this beautiful species. Swarms of *Eubolia mensuraria* moved from place to place as one forced one's way through the long herbage, whilst *Dasydia obfuscata* was in smaller numbers. *Acidalia perochraria* occurred frequently on the bank and one or two *Acidalia fumata* were disturbed; *Scopula alpinalis* ab. *punctata* (with white discal spot on the wings) was stirred up, as were *Crambus pratellus*, *C. dunetellus*, and *C. falsellus*, whilst *Phycis* (?) *adornatella* was also disturbed. Among the plumes, *Stenoptilia pterodactyla* and *Merrifieldia tridactyla* (*tetradactyla*) were very abundant, as were also one or two other species of which we do not seem to have retained a sample. Heaps of other interesting species were seen on this bank, but we had been already here more than two hours and the clouds appeared to be gathering. No sooner were we off the bank than the sun disappeared, but, hoping that it would not rain, we started up the narrow valley. We disturbed nothing fresh that we had not seen on the bank till we had got a considerable distance up the valley, when, in the corner of a field, we noticed at rest a fine example of *Cyclopides palaemon*, and soon afterwards netted two others, during a gleam of sunshine, on the wing, and a fourth at rest, but, with the exception of the first example, none were really good. We continued our walk up the valley, examined the lovely mosses, whilst the sky grew ever more and more threatening. Soon the rain began to descend, and before long we were driven back. The climbers ran by us at full pelt, and, knowing the appearance of the sky, showed their wisdom in their haste; having made little or no preparation against the weather we had to shelter and push on between the worst parts of the storm, but arrived at St. Anton sufficiently wet to require a thorough change. It continued to rain all that day and night, and all next day, during which we moved on to Innsbruck. It rained all the 4th, and, on the morning of the 5th, so, as the Meteorological Chart in the Maria-Theresien-Strasse had registered "Botzen, schön," for some days, whilst all the rest of the world was wet, I set my nose in the direction of Botzen, by way of the Brenner Pass.

### Summary of experiments with fertile ♀s of several species of ants.

By C. CRAWLEY, B.A., F.E.S.

1. *CAMPONOTUS LIGNIPERDUS*.—In June, 1905, I found an apterous ♀ of this species on a road near Ouchy, Switzerland. On June 16th I put her in a box with three ♂s of the same species, who immediately attacked her. I removed the ♂s, and next day put three more from another nest with the ♀. They were not so hostile as the first ones, but seemed frightened of the ♀, and avoided her.

2. *FORMICA RUF*A.—During August and September, 1904, I had a nest of *F. rufa* containing one ♀. On August 7th I put a strange fertile ♀ into my nest. The ants took very little notice of her, and she seemed quite at home among them. I then procured another ♀ from a different nest, and put her into my nest on August 16th, with a similar result. Two days later I put in a third, from another nest, with a similar result.

3. *FORMICA SANGUINEA*.—On September 13th, 1908, I put several ♂s from different nests of this species at Wellington College with a young fertile ♀ that I had picked up in the neighbourhood. They



were all hostile to her. I then put her with a number of pupæ and a few newly-hatched ♂s, not yet fully-coloured, from a nest I had under observation. I found these immature ♂s indifferent to the ♀, though the full-coloured ones were hostile. The ♀ assisted the pupæ to hatch, thus forming a small nest. On September 17th I introduced some ♂s from the parent nest into this small one. They very soon found the ♀ and attacked her, so that I had to take them out of the nest and separate them. I then put in a *F. fusca* slave from the parent nest. This *F. fusca*, though friendly to the ♂s, as were the ♂s from the parent nest, attacked the ♀ viciously. Eventually the *F. sanguinea* ♀, during the struggle, caught the *F. fusca* by the back of the thorax, killing the ant with a single bite. On October 2nd I again introduced a ♂ from the old nest. It found and attacked the ♀ immediately. I put no more in till March, 1909, when I put in two ♂s on the 12th. I watched carefully, but could see no signs of fighting. On March 17th and 18th I put in two more, and on the 19th, 20th, and 21st put in two each day. There was no fighting at all, so at 12.45 p.m. on March 21st I placed the two nests about four inches apart and opened the entrances. On returning at 2.10 p.m. I found the ♀ transferred from the new nest to the old, and the ♂s from the latter were engaged in carrying the workers from the new nest to their own. The two nests became one, which is still in existence (January, 1910). During 1909 the ♀ laid a number of eggs, all of which were devoured by the ♂s. In a nest of *F. sanguinea* and *F. fusca* with no ♀, a number of eggs were laid by the *F. sanguinea* and *F. fusca* ♂s during 1904, but all were eaten. On July 19th, 1903, I put a number of *F. fusca* pupæ (both ♂ and ♀) and larvæ outside a small observation nest of *F. sanguinea*. The *F. sanguinea* carried in the larvæ and pupæ, killing a few ♂s that were among them. About the same time I put in a fertile *F. fusca* ♀, which they killed. Some of these *F. fusca* larvæ were eaten by the ants, but others became pupæ.

On September 18th, after having been away for a fortnight, I found most of the *F. fusca* pupæ had hatched, and there were in the nest a *F. fusca* ♀ with one wing, another with only the two lower wings, and two ♀s without wings. There had been no ♂s in the nest, and these ♀s were not fertile. During the autumn of 1903 and the winter the examples of *F. fusca* in this nest (they outnumbered the *F. sanguinea*) were continually being pulled about by the *F. sanguinea*, two or three of the latter often attacking one *F. fusca*. The larger *F. fusca* ♂s and the ♀s seemed to be chiefly molested. One of the ♀s died during September, and another on October 14th, both having been attacked by *F. sanguinea* and *F. fusca* ♂s. The headless body of the third was found outside the nest on May 4th, 1904, but the fourth lived till June 20th. This same nest of *F. sanguinea* was doubled in size by the addition of ♂s from two nests at Wellington College. At first they seemed inclined to fight with the original occupants, but in a few hours they voluntarily entered the nest and joined forces with the others (August 16th, 1904). I gave the nest a number of *F. rufa* pupæ, which they readily carried in. On September 9th, when there was a large number of *F. rufa* ♂s in the nest, I put a fertile *F. rufa* ♀ to the door of the nest. She entered without hesitation, and was unnoticed by the *F. sanguinea* and *F. rufa*, but two *F. fusca* attacked her violently, and later a *F. sanguinea* and a *F. fusca*. The following day she was

still alive, but some *F. sanguinea* and a *F. fusca* were pulling her about the nest. On the morning of September 11th she was dead. The same evening I put another *F. rufa* ♀ about six inches from the nest. After a moment's hesitation she went straight to the door and inside. A *F. rufa* pulled her by a mandible for a moment, but she was otherwise unmolested. Next morning I found her outside the nest, quite unhurt, being dragged about by a *F. fusca*. On April 21st, 1909, I put a fertile *F. fusca* ♀ into a nest of *F. sanguinea* which only contained two *F. fusca* ♂s. The *F. sanguinea* made some show of attacking her, but she was allowed to escape unhurt.

4. *FORMICA FUSCA*.—I made several experiments with fertile ♀s of this species, and nests both with and without queens. All these experiments resulted in the strange ♀s being attacked, but unfortunately I omitted to record most of these cases. On April 18th, 1909, I tried a fertile *F. fusca* ♀ with some workers of the var. *rufibarbis*. They attacked her. On the 21st I put her in an observation nest of *F. fusca* which contained one ♀. These ants also attacked her. Again, May 22nd, I put the same ♀ with a few ♂s and a ♀ of the same species. The strange ♀ was found dead next day. A rather unusual case occurred last year. In a small plaster nest I had a *F. fusca* ♀ with one ♂. I put a ♂ of *F. subserica* (?) from America in this nest on October 6th, 1909. The solitary ♂ immediately began to fight with her, but after a few minutes they stopped. Next day there was one of the ♂s dead, probably the *F. fusca*. The *F. subserica* ♂ seemed perfectly friendly with the ♀, so on October 9th I put the remaining thirteen *F. subserica* with them. They were all friendly with the ♀, and, at the present moment (January, 1910), there still remain ten *F. subserica* ♂s and the *F. fusca* ♀.

5. *LASIUS FLAVUS*.—Besides several unrecorded failures to induce nests of this species to accept strange ♀s, I have noted the following:—August, 1898, I introduced a fertile ♀ to a queenless nest of the same species; the ants attacked her and penned her in with earth in a corner. August 6th, 1897, I put into a queenless nest of *L. flavus* a fertile ♀ that I had kept alone since the previous summer. She entered the nest readily and was soon surrounded by ants, who saluted her as they do their own queen. Only one ant attacked her for a moment, and she was accepted as queen. On January 14th, 1910, I put an old fertile ♀ of *L. flavus* into a queenless nest of the same species. Very little notice was taken of her, and she was soon attacked by several ants. All the apterous ♀s of *L. flavus* that I have captured immediately after swarming, have laid eggs a few days afterwards. I have found this species very hostile to ♀s of *L. niger* (January 14th, 1910, and other occasions), and *L. umbratus* (September 18th, 1909, and other occasions).

6. *LASIUS NIGER*.—In August, 1895, I took part of a nest of this ant and established it with its queen in a Lubbock nest. Wishing to possess the whole colony, a few days later I again dug up this nest and found another queen, which I put in my nest. The ♂s were perfectly friendly, but a few hours afterwards they dragged her out of the nest and left her. Workers from the old nest were readily received in my nest. On August 18th, 1898, I introduced some ♂s from a nest of *L. niger* (containing a ♀ *L. umbratus* as queen) to a fertile ♀ of their own species. The following day, when these ♂s were on friendly



terms with the ♀, I put them all into the nest. The ♀ was at once attacked, and a few hours later was dead. On January 9th, 1910, I put a fertile ♀ of an American variety of *L. niger* in a nest of the same species which contained a ♀. The strange ♀ avoided every ant she met, and was very soon attacked. Two queenless nests of *L. niger* accepted fertile ♀s of *L. umbratus* (August 24th, 1896, and September 19th, 1908), as already recorded (*Science Gossip*, May, 1900, and *The Entomologist's Monthly Magazine*, April and May, 1909). *Lasius flavus* ♀s were always attacked by *L. niger* (January 14th, 1910, and other cases not recorded). Isolated ♀s of *L. niger* kept by me have always laid eggs shortly after swarming (September 12th, 1904, and other cases), except two ♀s of an American variety of *L. niger*, 1909, whereas ♀s of *L. umbratus* have never begun to lay till the year after fertilisation (the two cases of *L. umbratus* ♀s and *L. niger* above mentioned, 1896 and 1908, and solitary *L. umbratus* ♀s in 1895, 1896, 1899, and 1909).

7. HOSTILITY TO STRANGE ♀s.—I have found *Myrmica ruginodis*, *M. laevinodis*, and *M. scabrinodis* invariably hostile to strange ♀s. The only case recorded was on May 18th, 1909, when I put a strange *M. laevinodis* ♀ into a nest of the same species. She was at once attacked and dragged out of the nest. I put her in again later, and she was again dragged out, one ♂ trying to sting her.

8. EMBRYO NESTS.—With regard to embryo nests, I have found what seemed to be the beginnings of nests among the following species only:—

(a) *Lasius niger*.—One solitary ♀ in sand at Wellington College, April 13th, 1903; a ♀ with larvæ under a stone at Ouchy, Switzerland, June 7th, 1905; and two ♀s alone under a stone, Cleveland, U.S.A., September 18th, 1909.

(b) *L. flavus*.—Four ♀s together under a stone (probably only a temporary retreat), August 6th, 1904; and a single ♀ in a small chamber in the earth under a stone (date not recorded).

(c) *L. umbratus*.—A ♀ under a stone with two ♂s, March 23rd, 1903.

(d) *Myrmica ruginodis*.—A solitary ♀ in the ground, April 18th, 1909.

(e) *Leptothorax tuborum*, race *nylanderi*.—A ♀, one ♂, and three larvæ, inside a beech-nut, at Pangbourne, Berks, September 24th, 1903.

9. *LASIUS FULIGINOSUS*.—At Ouchy, Switzerland, June 15th, 1905, I saw ♂s of *L. fuliginosus* pulling apterous ♀s after swarming into their nest. The ♀s apparently came from the same nest.

10. SMALL-WINGED *LASIUS FLAVUS* AND *L. NIGER*.—Females of *Lasius niger* and *L. flavus* are sometimes found with small wings, otherwise perfectly formed, but barely one-half the normal size. In Oxfordshire, August 21st, 1898, I found a ♀ of *L. flavus* on a road, with very small wings. Next day I found another near the same place. There were several normal ♀s about, as a nest had swarmed close by. A few days later, August 28th, I found some similar ♀s of *L. niger* in a nest, close to where I had found the *L. flavus* ♀s. On July 17th, 1900, I again found five short-winged *L. flavus* ♀s in a nest in the same neighbourhood, and six more on August 7th, 1901, on a road. I threw some of these into the air, but they dropped straight down, and seemed unable to fly. Again on July 19th, 1901, I found four short-winged *L. niger*

♀s in a nest in the same neighbourhood. I have most of these abnormal ♀s in my collection.

11. PECULIARITIES RE SWARMING.—It seems that it occasionally happens that all the winged ♀s do not always leave the nest when swarming, as some are found in nests long after the usual time for swarming. On September 14th, 1908, I found a large number of *L. fuliginosus* ♂s and winged ♀s on a bank close to their nest. There were no ♂s among them. This species usually swarms at the end of May or beginning of June. On October 18th, 1909, there were numerous ♂s in a nest of *L. flavus*, and they certainly never left the nest before the cold weather began. From observations on nests kept in captivity, it seems possible that under such conditions there is an analogous proceeding to the killing of drones by worker bees. In all the following cases the ants were allowed to wander over a large table, so that the ♂s and ♀s were not prevented from flying off. In August, 1896, the ♂s of a nest of *L. niger* that had just accepted a new queen, killed a solitary winged ♀ that had been in the nest for some time. On August 6th, 1897, ten winged ♀s in a nest of *L. flavus* that had just received a new queen, were killed, their wings having been previously removed. By August 26th, 1898, twenty-eight winged ♀s and four ♂s that had hatched in a nest of *L. niger* with a queen, were all killed and the wingless bodies thrown out of the nest. On August 26th, 1895, in a nest of *L. niger* containing a queen, one winged ♀ and six ♂s were killed; and two winged ♀s and one ♂ in another nest of *L. niger* in August, 1896, were killed. In this last case, some days before they were killed, the ♀s had become very excited, had removed their wings, and begun to carry pupæ about the nest. In another nest of *L. niger* the young ♀s and ♂s had been gradually destroyed, the last pair being killed on August 29th, 1898. On September 17th, 1908, three ♀s that had hatched in a nest of *L. niger* (that had just received a new queen) were stripped of their wings and killed. Lastly, in October, 1909, a solitary ♀ that had come to maturity in a nest of *M. laevinodis*, was killed, having first lost her wings.

### The Lepidoptera of the Tirol—The Sarnthal.

By J. W. TUTT, F.E.S.

Surely enough, as we surmounted the Brenner Pass on the morning of August 5th, the clouds broke, and by the time we had reached Botzen we found it fine, almost brilliant, the sun shining, and, as a good baking was nothing more than we then desired, we walked up into the Eggenenthal, but the entrance to this lovely valley in the porphyry mountains is narrow, and the afternoon being largely spent, little was to be done there, and we believe that *Parnassius apollo*, *Dryas paphia*, *Argynnis adippe*, *Brenthis daphne*, *Coenonympha arcania*, *Pararge megaera*, *Leptosia sinapis*, *Hipparchia hermione*, *Libythea celtis*, and *Anthrocera ephialtes*, of lovely steel-blue colour and white spots, were all the species observed.

The next morning was bright, hot and sunny, and so we made for the Sarnthal, and certainly August 6th and 7th were a real pleasure, yet we only explored a short distance up the valley, only knocked as it were at the door of the promised land. How the sun did pour down into that valley, how the heat was reflected from the steep



precipitous sides of the porphyry mountains, but had we not been living in the rain since August 2nd, and did we not want drying body and soul. Indeed, we got all the drying we wanted on August 6th-7th, 1909, and they were poor, parched, thirsty souls that called for a drink on the return to Botzen after about eight or nine hours' work each day at the entrance of the baking Sarntal.

It appears remarkable, as well as fortunate, that one of those species about which we had been writing so much the previous six months, *Everes alcetas*, and which we had lately been sifting from its near neighbour, *Everes argiades*, was one of the first species observed, and, as it was evidently just out, we took pains to get a nice long series of both sexes, hardly long enough we venture to think now we have them at home for all possible necessities. The species occurred on thickly overgrown weedy banks, where leguminous plants of various species were abundant, the ♂s flitting strongly above the taller plants and settling well up on the topmost points, the ♀s less active, but still prominent enough, often settling in front of the ♂s, when their hindwings rapidly moved wheel-like, and then scurrying off through the herbage to rise higher as soon as free of the undergrowth; in another place, where the Talfer had got over its usual banks and silted up a great bed of loess, now largely covered with willow, epilobium, coarse grass, and other herbage, at the foot of the wooded bank sloping from the roadway to the river, a tall, bare-looking leguminous plant, with minute white flowers, was the attraction, and above these *Everes alcetas* gambolled like *Celastrina argiolus*, and here, strangely enough, the latter species was not uncommon above the trees, and we netted two or three ♂s. On the level loess flat, *Platyles alpinellus*, *Endotricha flammealis*, *Cledeobia angustalis*, *Pyrausta purpuralis*, *Acidalia ornata*, and many other species were not uncommon, and samples of each were taken. Here also a fine large form of *Plebeius argyrognomon* was captured; whilst a second brood of *Scolitantides orion*, small, and the very antipodes of the splendid large black form, *magnifica*, occurring about the same time in the Vaudois Valleys of Piedmont, was already worn. *Polyommatus meleager* was not uncommon, the ♀, inclining to the *steveeni* form, but with the bases of the wings sprinkled with blue scales, the discoidal spots edged with pale, and the outer margin with a marginal and submedian row of pale lunules, and hence rather a form *intermedia* than real *steveeni*. *Polyommatus icarus* was also common, the ♀s without blue scaling, one ♂ of the *icarinus* form; the only other "blue" appeared to be *P. hylas*, ♂s only being captured, the species evidently only just coming out. High up round an ash-tree flew many *Bithys quercus*, of which only one ♂ was taken on this and another the following day. *Rumicia phlaeas* and *Loneia alciphron* var. *gordius* were the only "coppers" observed, the specimens in each case, perhaps, representing a partial second-brood, which was certainly the case with several *Nisoniades tages* which we picked up. On the other hand, *Augiades sylvanus* and *Coenonympha arcania* were still on the wing, the former in not at all satisfactory condition, although the latter were not bad; the specimens were small, however, and we had an idea that the Botzen examples taken in June were larger. *Leptosia sinapis* was abundant, freshly-emerged, and very variable in size, the ♂s with strongly-black apical tips. There were plenty of examples of *Melanargia galathea*.

about, but worn to shreds. A brood of *Pararge megaera* was found in one corner on the road, mostly of the *apiciocellata* form at the apex, but some with a third ocellus below the others—*triocellata*. A very characteristic dark ♂ form of *Epinephele ianira*, with one small apical eye on the upperside (and underside) of the forewings, and two very marked ones on the underside of the hindwings (*biocellata*), and a race of *E. lycaon* with the basal two-thirds of forewings dark, were just emerging, and a single *Enodia dryas* was disturbed, suggesting that this species also was just coming out; a single *Erebia ligea* was captured, whilst *Melitaea didyma* was not infrequent, but worn. A magnificent ♀ of what we suspect must be a very large red form of *M. trivia*, we are not able satisfactorily to place. Now and again a newly-emerged, but small-sized, *Issoria lathonia* found itself in the net, and, in one place, we found several *Brenthis daphne*, which must have been very abundant early in the season in the valley, but was now over, as also appeared to be *Pararge maera*, *Enodia hyperanthus* and *Pararge egeria*, the latter suggestive of the *intermedia* form. Of the common whites, one ♀ *Pieris napi* is interesting in its huge size and wonderfully large black spots on the forewings, although it is not of the creamy ground colour expected of the ♀s of this species in this district. Up and down the main road *Iphiclide podalirius* floats with inimitable grace; the ♂ *Lasiocampa quercus* are rich deep chocolate in tint, mad as usual, and making a rare fuss when they have flown into the net. *Papilio machaon*, of large size, now and again shows itself, and the *Parnassius apollo* are not abundant though large. Of the fritillaries *Dryas paphia* and *Argynnis adippe* are the most abundant, the former exceedingly fine and large, especially the ♀s, with an occasional ab. *valesina*. One of the most beautiful insects in the valley is *Anthrocera ephialtes*, of steel-blue ground colour, forewings with five (rarely six) spots, white, except the two basal which are cream-coloured, hindwings with one white spot, abdomen with one yellow ring round the middle. One would think one would know these anywhere—and a mile away. We thought we did. They love the thyme-flowers, and, as they sit thereon, one can pick them up with finger and thumb and examine them at leisure. We saw, on the morning of August 6th, a clump of thyme blossom with several busily sucking the nectar; we gently swept the net over them, enclosed the lot, and sat down to look at them at leisure; result—one *Anthrocera ephialtes* and six of a hymenopterous species that we had mistaken for the burnet. We were interested; everywhere up the valley the two occurred together, the Hymenopter always more abundant than the Anthrocerid. The Hymenopter is steely blue-black, no spots on wings, two yellow rings round abdomen, nothing like the Burnet when in the collecting box, yet, till we made an actual close examination, or rather looked carefully, we couldn't tell t'other from which, and have no doubt that one or other, the moth probably, gains protection from the similarity. We came across *Satyrus hermione* but could not catch them; rather, only a few of them and then they were mostly broken; what fine fellows these are, and what an education they have had in artfulness. We spent many hours at the entrance to the Sarnthal and we had boxed we did not know what, and we knew someone would ask us some day what we thought of the Sarnthal, but we had never lifted our eyes to the sky, nor to the river, the trees nor



anything. We had just been catching butterflies, so we shouldered the net and intended having a look at the valley; we walked on through the lonely gorge, between the precipitous porphyry rocks, when, suddenly, the valley expanded and, a large black velvety *Erebia* came down from the clouds above right into the net, ♂ *Erebia nerine*, another and another, and yet others, all in the pink of condition. What could we do with *E. nerine*? The perpendicular rocks fell back suddenly; a steep, rocky slope, with scabious and other flowers came sharply down some 50 feet to the roadside; the sun shone on it hotly; from every flower hung a lovely *E. nerine*, many ♀s; the only species that really disturbed them were *Dryas paphia* and *Callimorpha hera*. We climbed the bank and having good nails feared not, we gently gathered those *E. nerine* to the collecting-box, already over full. Presently there were very few *nerine* left on the lower part of the bank. We descended, and sat down to rest, looked longingly up the valley, and turned back to Botzen. We slept the sleep of the tired that night, but, alas, we had barely entered the Sarnthal.

I apologised to myself, and promised that next morning I really would go up the Sarnthal. I set out insects for two or three hours, had an early breakfast and started. Oh, but it was hot. How we struggled to get up the valley that day, we worked as those having a promised land in front, and when, at about 3 p.m., we reached exactly the same spot that we had discovered the previous afternoon, we set resolutely forward. We must have got a good 100 yards further when we saw a flower-choked gully on the right-hand side. We went up that gully, we nearly broke an ankle. We found a tree covered with ripe wood-nuts, and sat and bathed and nursed the ankle and then we went home, hot, tired, and happy. We still have to organise a raid, when it is less awfully hot, on the Sarnthal. On the second occasion we found many nice things not seen the previous day; one was a lovely deep purple (instead of steel-blue) example of *Anthrocera ephialtes* (= ab. *purpurascens*); a very fine ♀ *Anthrocera achilleae* with the red spots occupying the greater part of the wing (var. *sarnthalia*); an unexpected, small, probably second-brood, example of *Euchelia jacobaeae*, specimens of *Erynnis alceae*, a ♂ *Loweia dorilis*, *Coenonympha pamphilus*, *Melitaea athalia*, *Brenthis ino* (worn), *Setina irrorella*, typical ♂, *Micra ostrina*, *Anarta myrtili*, *Naclia ancilla*, *Madopa salicalis*, *Syntomis phegea*, *Thalera fimbrialis*, and a specimen that, one thinks, must be a second-brood example of *Hesperia malvae*, all common things of course, but most important when one is working up the fauna that occurs at the entrance of a fine hot valley.

### ***Lathrobium longipenne*, Fairm.; an addition to the British list.**

By G. W. NICHOLSON, M.A., M.D.

On March 6th, 1910, I took a single specimen of a small *Lathrobium* at Boydon, Essex, in a tuft of grass at the roots of a willow. On comparing it with Dr. Sharp's collection at South Kensington, it proved to be identical with his two specimens of *L. longipenne*, Fairm., both of which are labelled "Germany."

The following is a free translation of the original description of this species (*Faune entomologique française*. Paris, 1854)—

Dark brown, moderately shining. Antennæ reddish-testaceous, as long as head and thorax; third joint slightly longer than 2nd; the others almost moniliform, gradually diminishing in length. Head slightly broader than thorax, almost square behind eyes, with posterior angles rounded; punctuation fairly strong. Thorax half as long again as broad, with all its angles rounded; slightly contracted at base; punctuation strong, with a shining smooth line on middle of disc. Scutellum smooth. Elytra broader and a little longer than thorax, moderately depressed at sutures; punctuation finer and closer than that of thorax. Hind-body very finely and closely punctured, narrower at base than elytra, somewhat widened towards apex; fifth segment with a whitish apical border; 6th fuscous at tip. Feet, pale reddish-testaceous; anterior femora broad, with a fairly strong tooth on inferior surface. L. 4mm.

This species resembles *L. longulum*, Gr., in size and general appearance, but differs from it in having longer elytra, which, in Dr. Sharp's, as well as my own, specimen, are brick-red, with a darker base.

Both the last edition of the European catalogue and Ganglbauer, consider *L. longipenne* to be merely a variety of *L. longulum*. It appears, however, to be quite distinct enough from it to deserve to be treated as a separate species. I may add that Ganglbauer does not mention the red elytra.

Subsequent visits to Roydon have not, as yet, produced any more specimens of *L. longipenne*, nor have I ever found *L. longulum* there.

### Lepidoptera of the Tirol—The Mendel Pass.

By J. W. TUTT, F.E.S.

It was in 1895 when we last visited the Mendel Pass. It was the first locality in which we had ever collected in the Tirol, and we found it a place overflowing with milk and honey. No one can imagine the delicious isolation of the beautiful Mendel Pass as it was fifteen years ago, unless he had visited it then. However, we had read a report that the Mendel Pass was no longer what it had been entomologically, that the best ground was covered with hotels and overrun with crowds of visitors, that a wretched mountain railway had penetrated the very heart of our solitude, that, indeed, the slopes of the Penegal resounded with ribald laughter and other concomitants of a place opened to the public on a large scale, and we felt that it was necessary for us to judge of this desecration for ourselves, so, on August 8th, 1909, another lovely morning, we found ourselves in the decreed railway mountain-car *en route* for the summit of the Mendel Pass. Quite a crowd of people seemed to be going with us, and when we were discharged at the station, it is quite true that we did not know where we were. New roads, new buildings, lots of people everywhere, and our heart sank, but, as we stepped out beyond the circle of buildings along the new upper road, on the side of the Penegal, and going towards Fondo, and had, perhaps, advanced 500 or 600 yards, we felt no more fear, for already we had left the little hustle at the top of the mountain railway far away in this highland solitude, and we were almost as alone as in the days of yore. Butterflies abounded everywhere on the slopes on either side of the new road, we counted some 30 species as we stood still in one position for about 10 minutes. Last season was, perhaps, a good one, but the insects appeared to us quite as abundant as in 1895—*Erebia euryale*, *E. aethiops*, *E. tyndarus*, *E. goante*, *Melanargia galathea*, *Pararge megaera*, *Coenonympha arcania*, *C. pamphilus*, *Aporia crataegi*,



*Pieris napi*, *P. rapae*, *P. brassicae*, *Leptosia sinapis*, *Brenthis amathusia*, *Melitaea didyma*, *M. athalia*, *Agriades coridon*, *Polyommatus icarus*, *Aricia astrarche*, *Cyaniris semiargus*, *Argynnis adippe*, *A. niobe*, *A. aglaia*, *Dryas paphia*, *Hesperia alveus*, *Urbicula comma*, *Adopaea lineola*, *A. flava*, *Klugia spini*, etc., were all quite abundant among the houses, and doubtless many more that we do not remember, e.g., *Parnassius apollo* was in numbers, and *Papilio machaon*, *Gonepteryx rhamni* were observed as soon as we left the train, etc. The three usually common Anthrocerid species—*Anthrocerus achilleae*, *A. transalpina*, and *A. loniceræ*—were in great abundance, and we found *Erebia nerine* on the Fondo road, within 200 yards of the hotels. Having, as it were, quite settled in our own mind that the butterflies that used to occur here were as abundant as ever, we turned back, intending to walk the whole distance from the Mendel Pass to Botzen by the well-known zigzags, the “serpents of the Mendelstrasse.”

It was noon before we had returned to the station, and the distance from Mendel to Botzen is little short of 17 miles, so if we were to collect on the road back there was but little time to lose. From the summit of the Pass, about 4500ft. elevation, one of the most glorious views away across the Adige valley unfolds itself. Due east the lovely pinnacles of the Dolomites stand out in splendid array—the Schlern, the Rosengarten, the Latemar, Schwarzhorn, etc.—but one dreams of the amphitheatre of peaks from the summit of the Penegal, to which one must climb if one really wants to see the surrounding mountains in their glory. *Erebia nerine* was found abundantly even close to the summit, the ♂s often hidden away in the crannies of the hot rocks, or on the saxifrage flowers, whence the ♀s were usually to be dislodged. Two fine ♂ examples of the dark form in which the fulvous band on the forewings is all but obsolete, and on which the little white centres of the ocelli stand out contrastingly against the black, were taken; this extreme form, reminding one a little of the eastern *melas*, we first took at Cortina, in 1895, when we named it, if we recollect rightly, *ab. obscura*; it is a most striking form. The species up here was in fine condition, much better than 1000ft. lower down, where one leaves them as one parts with the rocks and enters the woods “through which the serpents” curve their way. From the rocks, too, *Dasydia obfusca* was in great force, both large and abundant. The *Parnassius apollo* of the slopes is a fine large race, and all four of the usually common large fritillaries—*Dryas paphia*, *Argynnis aglaia*, *A. adippe*, and *A. niobe*—are very common. A few hundred feet below the summit we came across a sight that does good to the eyes of a naturalist—a large lime-tree in full bloom shed its luscious fragrance around. To the nectar were attracted not only large numbers of flies and bees, but crowds of butterflies and “burnet” moths. The two most abundant butterflies were *Dryas paphia* and *Argynnis adippe*, which sailed round the trees, settling now on the leaves, then on the blossom, with wings outspread. To these *Pyrameis atalanta* added its graceful beauty, and a sudden smaller species with somewhat bustling flight told of *Libythea celtis*. It stood a moment, then darted off rapidly and returned again, whilst swarms of *Erebia euryale* continuously fluttered up and down to the feast; it would have been possible to have stood on the path on a level with about the centre of the tree, and swept off almost every visitor. We saw no other lime-tree in blossom, and hence this, no doubt, was

attractive for a large area round. From here one still gets an excellent view of the Dolomites across the Adige valley—the Schlern, Rosengarten, and Latemar standing up in picturesque grandeur in the distance. Below the valley looks flat, and the lovely lakes, of which Lake Kaltern is the largest, appear to be embosomed in the vineyards, but, as we descend we see clearly that the lakes are hidden among the hills, the height of which is lost at this greater elevation. Lower down, *Eugonia polychloros* and both *Limenitis camilla* and a worn *L. sibylla* are brought to the net, and *Everes alcetas*, worn *Lycaena arion*, and a ♀ *Polyommatus amandus* were taken. But the insect of the upper slopes, next to *Erebia nerine*, is *Libythea celtis*. As one comes over one of the stone bridges where a steep ravine serves as a stone-shoot from near the summits of the Penegal to the skrees below, a brown butterfly, with flight almost like that of a large “skipper,” only just clear above the surface of the ground, doubling and redoubling with great vigour, invites a scuffle, and it is some time before the artful *Libythea celtis* is safe in the box, where it settles down, its forewings pulled tightly down between the hindwings, the lower margin on a level with the ground, the antennæ and long palpi stuck out in front, the tips just touching the ground, the colour, shape, and general ensemble producing the complete resemblance to a leaf. All the slopes attract one because of the abundance of their insect fauna, and, where the steep precipitous dolomite rocks fall hundreds of feet sheer down on to the Mendelstrasse, every cranny holds *Erebia nerine*. There is no need to try to catch the wayward ones, yet it may be worth while to notice how, once this species is worried, it goes down to the road, and, by maintaining itself almost flat and not ceasing to flutter towards the edge where the slopes on the other side descend, it generally manages to get away. Now and then *Satyrus hermonie* rushes past one, and is occasionally netted, such as fall to the net appear to be in better condition than at the entrance to the Sarnthal, due probably to the very considerable difference in elevation, a suggestion supported by the condition of the common *Melanargia galatea*, many of which are still quite fresh, whilst *Epinephele ianira* appears to be only just emerging. In one or two places *Hipparchia semele*, a fine large form, is not infrequent, but it appears to be local, and, on such stony sloping ground, difficult to catch. Now and again round the trees one sees *Celastrina argiolus*, but the species is not common, and then past the saxifrage-covered stone walls, beloved of *Klugia spini* and *Erebia aethiops*, one comes at last to the well-known little “quelle” or stream by the wayside. Here numbers of *Agriades coridon*, *Erebia aethiops*, and the last specimen of *Libythea celtis* are captured. It was now nearly 3 p.m., we seemed to have been hustling ourselves all the way from the summit, yet there were very few kilometres done, and lots yet remained to be done. There was no hope for it, so we took the short cuts through the woods, where we saw many *Pyrameis atalanta*, a single *Euanessa antiopa* quite out of reach, a single worn *Limenitis sibylla*, an abundance of *Leptosia sinapis*, *Gonepteryx rhamni*, *Argynnis adippe*, *Dryas paphia*, the fritillaries getting very worn, low down. *Callimorpha hera* also became abundant, and, in one of the gardens near Sigmundskrone, we saw *Bithys quercus* flying round the plum trees. Here, too, by the roadside, *Epinephele tithonus* was in great abundance, apparently just emerged



and mostly ♂s. By this time more than another hour has sped, but the kilomètres have lessened and we go steadily on. Our ignorance of the locality here led us astray, for we might have struck the railway and saved at least half a dozen miles in which no entomology was to be done, but we did not, and it was fully 6 p.m. before we found ourselves washed and comfortable in our hotel at Botzen, perfectly satisfied though that Mendel is still safe for the butterfly-hunter even if he has to walk a few hundred yards for his specimens instead of taking them almost in the hotel grounds as of yore.

### Note on the Habits of *Nemeobius lucina*.

By A. S. TETLEY, M.A., F.E.S.

I found *Nemeobius lucina* generally distributed from May 15th to 29th, 1910, in the Rhone Valley at S. Maurice, Lavey, and Martigny, and also near les Avants on the northern slopes of Lac Lemman. It occurred freely at Baveno and Laveno, on Lake Maggiore, from May 18th to 21st. On May 28th I noticed specimens between 9 and 10 a.m. sucking honey from *Medicago sativa* and *Anthyllis vulneraria*. The sun had not been long on the meadow and the grass was still wet with rain. The butterfly sat with wings inclined upwards at varying angles, generally from 100° to 120°, but occasionally much closer. I do not remember seeing it with wings closed above the back. All I observed sat with "tail" to the sun; if they pitched otherwise they appeared always to twist round to the aforesaid position. The primaries were drawn up from the secondaries, but not excessively so, the inner margin of the fore-covering the costa of the hindwings for perhaps three-fifths of length. On May 15th, in hot sunshine, between 11 a.m. and 2 or 3 p.m., I noticed a number flying among low bushes, mainly hazel and little spruces, or similar conifer, at Lavey. They sat in the way above described, and, when disturbed, generally returned to the same place, often to the same leaf. Several times I observed two, when meeting, flying up in the air 15 or 20 feet and apparently attacking each other, but quickly separating and returning to their original posts. I noted them as being both ♂s in one case. The insect generally flew with short sailing movements interspersed with numerous little jerks. In all places where they were seen there was abundant growth of *Primula veris*. Some ♀s were very large and bright in colour and conspicuous on the wing. I saw no pairings and no oviposition, though the general scarcity of butterflies left me ample time and opportunity for observation of this little creature. It was in excellent order, but far scarcer than in 1907 and 1908 at Lavey, where it was very abundant in those years. It flies there with *Hesperia alveolus*, *Nisoniades tages*, *Cupido minimus*, and *Melitaea parthenie*.

### A Natural History of the British Lepidoptera.\*

By G. T. BETHUNE-BAKER, F.L.S., F.Z.S., F.E.S.

Another exhaustive volume of the British Butterflies has been

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completed, and it goes without saying that it is replete with much varied information. The facts gathered together about the larval habits of the species dealt with, to say nothing of many others that do not come within the ordinary range of the work, are most useful to all field-workers. The "Chrysophanid," or, as I should say, the Heodid, caterpillars, appear to be very restricted in the choice of their pabulum, though, in America, there are more than one species that depart from the European restriction, for, besides *epixanthe*, mentioned by Tutt as feeding on cranberry, *dorcas* makes another departure feeding on *Dasiphora fruticosa*. We notice six genera suggested, some new with the type species merely indicated, viz., *Vacciniina optilete*, *Cyaniris semiargus*, *Albulina pheretes*, *Latorina orbitulus*, *Agriades coridon*, *Polyommatus icarus*. When a genus is created we think it should be definitely described, this precedent scarcely seems in keeping with the rest of the book, so particular as to facts and accurate in details. We notice Dr. Chapman (*antè*, p. 101) has a pregnant sentence, he says in some remarks about the male appendages of the Plebeiids, "The form of the clasps and dorsal processes define the group very distinctly from any other, but are also very slightly different in different species, yet almost always sufficiently to afford specific characters. But their failure to afford characters to define genera is remarkable, in view of their affording such good tribal and specific characters. This failure is noted specially in the case of the genus *Plebeius*." The doctor then goes on to indicate some possible classification on the form of the ædœagus. The failure referred to is, in our opinion, very definite indeed, and with our experience of the genitalia, not forgetting their weaker points, we think it indicates conclusively that the genus *Plebeius* (including as it does the vast majority of the Palearctic blues) forms one good thoroughly homogeneous genus, and that it ought not to be subdivided at the present time. Had the author of the genera named had time to sit down to write an exact diagnosis of each genus from the perfect insect, he might have found he had written the same diagnosis over and over again, with the result that the genera would have not been created. We will deal with all adverse (if I must use the word) criticism at once, for the volume is really a monument of hard thinking and hard working out, but we must refer to the multitudinous naming of aberrations, personally, I should never name anything that was not a local race, these aberrations are purely individual—may even not be met with again—what is the object of a name for them? Are they to be catalogued, in say Staudinger's next "Catalog"? if so, it will reach many volumes, and the future student will have his labour increased enormously. To our mind, the naming of such specimens answers no scientific purpose, and we heartily wish the author could look at the matter from our point of view.

There is another thing that we think would save our Editor a large amount of labour. Would it not be possible to amalgamate the "Time of appearance" with the "Localities" and "Distribution." It would answer the same purpose and save the author the writing twice over much of the same material?

The amount of time spent in hunting up the original publications must have been very great. The result is that we see some old friends with new names; we shall, no doubt, get accustomed to them in time, and without doubt it is labour well spent. We scarcely expected to have



one name altered, and as we come to *thetis* we are tempted to ask, as it were with the Winchester boys of old—though we hope not with their arrogance—"argus I know, and *coridon* I know, but who are you"? doubtless, as of old, Marlborough forced itself into public recognition, so will *thetis* to-day, in fact, have we not already almost got accustomed to it. Dr. Chapman's minute descriptions of the early stages, both larval and pupal, are not the least welcome part of the volume which is indeed a valuable monument of careful scientific working out, the mass of material that must have been gone through, weighed up and reformed must have been enormous, but the result is worthy of the effort and the author, and the criticisms here ventured on will not detract from the value of the work accomplished. Of the many excellent plates we would mention those of the ova, Plates i and xxxiv, and the proleg, Plate xxx, which will be most useful, but for intrinsic beauty, though the imago of *thetis*, xlii, is very good, none come up to the perfect delineation of *semiargus* on liii. The Plate of the variation of *argus* (*aegon*) clasps, xxiii, is interesting, but to my mind rather inclined to be misleading, for they are not in the same position, and the least alteration of position renders some of the serrations or teeth at the end of the clasps invisible, and alters the shape of others. There is, however, no question that the Plates form a very valuable attraction to the volume under review.

To the scientific worker however (apart from the mere collector) the elucidation of the correct names of the various forms of *semiargus* and *coridon* is of the greatest value. We had become accustomed to accept the determinations of palæarctic species by my old friend Dr. Staudinger as "gospel," and to learn that, on reference to types and figures and descriptions, these determinations are mostly incorrect comes rather as a shock, but there appears to be no doubt that, in both the species referred to, he distributed large numbers of the various races to all the more important collections under names that are here shown to be incorrect. Taking into consideration the Spanish and Mediterranean forms of *coridon* it would seem as if an actual reference to descriptions and plates ought to have prevented these errors. In treating the Asiatic races of *semiargus*, however, and in the unravelling of *helena*, Stgr., *bellis*, Fr., and *parnassia*, Stgr., great difficulty must have been experienced and very keen insight required, and the author is to be congratulated on the success he has achieved in the discrimination of these closely allied forms of this species.

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### Spring Butterflies at Sierre, Les Matécotles and Zermatt, in 1909.

By H. L. EARL, M.A.

After reading through Mr. Wheeler's interesting accounts of successive butterfly seasons in the Canton Valais, I at first concluded that there was little more to be written on the subject, but a three weeks' visit to that favoured region last spring proved of such interest to myself that some account of it may be of use to other collectors.

My wife and I left England in cold weather on May 18th, and reached the Bellevue Hotel, Sierre, on the morning of the 22nd, in tropical heat, which lasted to the end of our week. Only the mornings were suitable for collecting. Every afternoon the sky became overcast, distant thunder was heard, and a storm of dust blew up the Rhone

Valley, though without rain. Our best work was done in a grass meadow between Sierre and Miège. I call it grass, but in reality it was a flower-garden past the wit of gardener to devise. The ground growth seemed to consist of myosotis and a golden *Euphorbia*, *Anthyllis* and *Galium verum*, from which rose a tall crop of scabious, trollius, aconite-leaved ranunculus, *Geranium sanguineum*, and some attractive umbellifers, which I will not risk labelling, and lastly a lovely blue *Salvia*. The best spot was a little bank facing south, where the ground had been terraced to shore up the vineyard above. I could reach the whole of this slope from the footpath, and yet respect the "défense hors du sentier." The conditions for collecting were admirable, no swarm of any one kind, but abundance of species, and specimens generally in perfect condition. *Melitaea cinxia* was the commonest butterfly, and after the first half hour I left them alone. *M. didyma* was just coming out, and I was much struck by its brilliant colour in the sunlight. *M. athalia* and *M. parthenie* were scarce, and *M. phoebe* was represented by three specimens, one very light coloured. *M. dictynna* was just beginning, *Brenthis dia* was very much worn, and *Issoria lathonia* very small and almost in rags. I noticed its frequent habit of settling in the middle of a dry cart-track. *Brenthis euphrosyne* had larger spots than those of the New Forest. *Colias hyale* was hardly ever out of sight. *Papilio machaon* was not common, while *Iphiclides podalirius* was very much in evidence, mostly minus the tails. I observed two curious features about this flower-meadow. All our commonest species were there, but very scarce. I saw single specimens of all our Vanessids, except *Vanessa io*, which was in fair numbers, and our common whites, *Coenonympha pamphilus*, *Colias edusa*, *Callophrys rubi*, *Rumicia phlaeas*, *Nisoniades tages*, and *Polyommatus icarus* (*alexis*), were only here and there. Melitæids, with *Colias hyale*, *Aporia crataegi*, and *Iphiclides podalirius*, were the species that enlivened the scene. The other noticeable feature was that butterflies known to us as possessing particular habits and tastes seemed to abandon their peculiarities and meet on the common ground of a flower garden. Thus *Leptosia sinapis*, *Agriades thetis*, *Papilio machaon*, and *Cupido minimus* forsook their woods, chalk downs, and marshes, and might be seen on the same scabious and sage blossoms. Of the blues, *Cyaniris semiargus* was on the wing on footpath, and high road. *Glaucopsyche cyllarus* was scarce, *Agriades thetis* abundant and large, and among the last I found one *Polyommatus hylas* on my return. A single *Everes alcetas* very nearly passed itself off as a small *Polyommatus icarus*. We were unable to explore the Pfynwald thoroughly, as the heat and dust of the road from Glarey were almost unendurable, but the open spaces and rocky slopes a little past the Rhone bridge were full of *Colias hyale*, *Melitaea cinxia*, and *M. didyma*, and a single *Hesperia carthami* was taken. Among the *C. hyale* were two whitish specimens, and I also took a strange aberration of *M. didyma*, in which the rich red of the upper wings gives place to a pale straw-yellow. May 27th found us at Les Marécotles, an admirable base for collecting, about one mile above Salvan, on the Martigny-Châteldard line, where we found comfortable quarters at the Chatel Belmont, kept by English proprietors, Mr. and Mrs. Macey. Our elevation was now 3400 feet, the weather had cooled, and we feared we had done wrong to leave the Rhone Valley, but the news that two swallow tails and a white had



strayed into the house that same morning put us in good heart, and next morning a mowing field of less than half an acre turned up no fewer than 37 species, while, except for a day at the Glacier des Bossons and a walk to Finhaut, we could hardly get past the spot. Here, we at once found ourselves among the Parnassiids; *Parnassius apollo* was well out and in grand condition, careering round the field, and then hovering over a flower with that hesitancy which often landed it in the net. *P. mnemosyne* appeared twice, one being imperfectly developed. Of the Lycænids, *Cupido minimus* and *Cyaniris semiargus* were more abundant than at Sierre, but freshly emerged, a *Glaucopsyche cyllarus* and *Scolitantides orion* were fairly common. I took some *A. thetis* ♀s with very pronounced orange spots on the lower wings. A single *Iphiclides podalirius* would take possession of fifty yards of high road, sailing backwards and forwards, well on the alert, yet without apparently moving its wings. A large Erebiid, *Erebia evias* I believe, became common as the road approached Finhaut, at about 4000 feet. *Leptosia sinapis* haunted every firwood on the way up to La Creusaz, and seemed to run through the whole gamut of possible variation, very large, very small, with very dark tips, and without any tips whatever. *Pieris rapae* were very diminutive, one no larger than a fine *A. thetis*; *Pieris rapae* was now common, and I was pleased to take *P. napi* var. *bryoniae*, with nearly the whole upper surface clouded by the nervure shadings. A brilliant Chrysophanid was just appearing when we left, *Loweia alciphron* var. *gordius*, skipping like a dancing flame from one blossom to another; *L. dorilis* was much more common, but worn. At Chamonix I saw a splendid *Euvanessa antiopa*, and the pinewood skirting the Glacier des Bossons was alive with *Euchloë cardamines*, *Leptosia sinapis*, and *Melanippe hastata*. On June 4th, we went to Zermatt, the weather was cold throughout the week, rain every afternoon until the last few days, when it snowed continuously. Even in the mornings we had only gleams of sunshine, the sun was often obscured by one small cloud, which kept developing at the windward side as it came up, and dispersing as soon as it was past the sun, so we had the vexation of seeing the surrounding country bathed in light while we were in the cold shade. I was much impressed by the absolute necessity of the sun's rays for insect activity. One morning about ten o'clock, before the sun had risen from behind the Taeschhorn, I saw a fine *Parnassius apollo* on a grass stalk; the net was carefully placed over it, but it did not move. I then tried to tip it into the cyanide bottle, but it clung fast to the stalk; finally I pulled it off the grass and let it rest sideways on my hand, yet neither leg nor antenna moved. Nevertheless, in ten minutes the sun had risen hotly above the mountain, and *P. apollo* were flying vigorously in all directions. I often noticed this species and *Aporia crataegi* drop the instant the sunlight was clouded. It seemed as if they not only preferred the sun, but were physically unable to fly without it. Can this have anything to do with the supply of oxygen necessary to the intense activity of insect flight? *Parnassius apollo* also differs from all butterflies of my acquaintance in its tenacity of life; it was as reluctant to die as the most intractable Sphingid or Bombycid. Lastly, *P. apollo* must be made of good wearing material, for I have never seen a specimen that was not in perfect condition. *Pontia daplidice*, which I had not seen as yet, was common near Täsch, also the Swiss

form of *Euchloë cardamines*, large and strong on the wing, the large orange tips covering quite two-thirds of the upper wing. *Pieris napi* var. *bryoniae* were common and fine on a stretch of the road about a mile and a half below Zermatt, one very large specimen being of a bright yellow ground colour. I once mistook it for *Colias phicomone*. On the 9th we walked up to the Gornergrat, seeing nothing on the way up, as the day was cloudy and threatening. The snow-line was high for the date, there being practically none till some distance above the Riffelberg Hotel, but the flowers made up for the want of *Rhopalocera*. We saw large slopes almost covered with the little *Gentiana verna*, with here and there a discordant colour caused by a large purple viola. The *Gentiana acaulis* was just coming out, and a yellow field above the Riffel Alp, which might have been cowslips at a distance, proved to be one mass of *Anemone sulfurea* above the snow-line, and between the deep drifts the large *Anemone alpina* was just lifting its oppressed head where the snow had melted. On the way down, at about 9000 feet, midway between the Gorner Grat and the Riffelberg, my wife noticed a white butterfly at rest on a stone, and as every butterfly at such an elevation should be arrested on suspicion, I transferred it to the killing bottle, and found I possessed a newly-emerged *Pontia callidice*, a species new to me. Suddenly the sun burst forth, and the level patch, partly green, partly snow, was alive with *P. callidice*, all perfect, and I secured a good series. To look on the unclouded Matterhorn, Monte Rosa, Breithorn, Castor and Pollux, and the Lyskamm, to stand on gentians and anemones, to catch a score of *P. callidice*, and to breathe the Alpine air of 9000 feet, made up an embarrassment of luxuries hard to beat. A single Erebiid, flying over a drift, looked intensely black against the snow, but it was impossible to pursue it; its size was halfway between *Melampias epiphron* and *Erebia aethiops*. On the way down through the pinewood below the Riffel Alp, *Leptosia sinapis*, as usual, abounded, and we saw a few *Agriades thetis* and *Cyaniris semiargus* with *Pontia daplidice* in the meadow at the foot of the slope, but it was too early for meadows at Zermatt, and the only good work that I did, except at the Gorner Grat, was on the rock-strewn slope towards Taesch, on the right bank of the Visp. A climb up the Trift Gorge was altogether unsuccessful; we saw nothing on the way up except a colony of *Nemeophila plantaginis*, and, on reaching our goal, which was a high level spot with sheds where cattle were kept in the summer months, we saw only one *Aglais urticae* settled on a dense scrub of nettles and dandelions which had elbowed the native gentians off their own ground. (Why do nettles invariably follow the tracks of humanity?) Considering the early date of our visit, and the unsatisfactory weather of the latter half, I was more than content with the fifty-eight species seen or taken, and the result has determined me, if possible, to devote a longer time, and cover more ground in the summer of 1910.

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### A note on hybernation in Lepidoptera.

By T. A. CHAPMAN, M.D.

The following observation seems of interest in its bearing on the conditions governing hybernation in insects. Hybernation in most species, I am thinking rather of lepidoptera, is a matter of inherited



habit and instinct, an individual of *Aglaia urticae* may thus be constrained to commence hybernation in June, and a larva must die rather than hibernate, if unable to feed up to the proper stage. It is, no doubt, a matter of natural selection that the habit and the conditions (chiefly the seasons) shall be duly co-ordinated. The process or possibility of hybernation no doubt originated (at some remote epoch) in the quiescence of protoplasm at a low temperature and under starvation, but it is now something much more definite than this.

The faculty of, or capacity for, hybernation is rather a function of the protoplasm than of the organism as a whole. That it is so follows, I think, from these considerations; as a function of protoplasm it is not only of very ancient date, but must have taken a long period for its evolution, but, as we see it now, and if we regard it as a function of the organism, it is necessary to suppose that it can be developed or lost at very short notice. For instance, the cases are abundant in which closely allied species hibernate at different stages. The habit of hibernating as an egg can be comparatively quickly lost and replaced by hibernation as a half-grown larva (say *Agriades thetis* and *A. coridon*) or vice versa, or the change may be from pupa to imago (*Araschnia levana* and *Aglaia urticae*), etc. It would seem, therefore, that, though the definite power to hibernate must have been of slow evolution, the decision as to the stage in the insect's life at which this power shall be exercised is capable of much more rapid variation. For this, possibly a very few generations will suffice, the motive for the change being that the natural stimulants to hybernation be brought to bear at a different stage. The following observations on *Leioptilus tephradactyla* show that questions of food still have a determining power, if not on the commencement of hybernation, at least on the date of its termination, and that not merely an increase of temperature is necessary to this end, but, in some larvæ, at least, the protoplasm does not give up the hibernating attitude till fresh nutriment is supplied to it, but once the attitude is yielded it cannot be resumed. This last remark, as more than a statement of a special case, is flatly contradicted by an observation on *Pselnophorus brachydactylus*, of which several hibernated larvæ, instead of going ahead with their brethren on the spring awakening, fed a little, moulted once (one twice), and finished by starting hibernating again, to appearance, in the same instar in which they had already hibernated; a very similar occurrence is not unusual in Anthrocerids.

During the winter of 1909-10 I had hibernating a number of larvæ of *L. tephradactyla* on plants of *Solidago virgaurea* in three flower-pots. They were, however, somewhat neglected, and, on examining them at the end of March, I found that the plants in two pots were apparently dead, that in the third, however, in fair condition. Very few of the larvæ were, however, dead, but several on the living plant seemed to be eating a little. Having to leave home, I put all the larvæ on the living plant, and left them to their fate till May 16th. I then found that the living plant had been eaten away, a few larvæ still nibbling at stumps. A few larvæ were dead, from starvation almost certainly, several hardly grown at all, but most had moulted at least once, and were somewhat advanced. The living larvæ were at all stages up to half-grown in last skin.

I then found that, in one of the pots, laid aside as having the

plants dead, the plant was alive, and had three larvæ on a bud just showing itself, these had grown slightly, one rather more than the others. At another place in the pot were three other larvæ, fairly close together, possessed, one supposes, with some hope that a bud would come up at that place, though examination showed that the hope was without foundation.

These six larvæ had, of course, been so hidden that I had passed them over when clearing the pot of larvæ at the end of March. The points that strike one as interesting are that those larvæ that were on a living plant grew more or less till starvation set in, and that then a certain proportion, no doubt those that failed to obtain any of the failing supplies, died, and not less those that had thriven and grown, than those less forward. On the supposed dead plant there were, however, six larvæ, all alive and well, and a careful search failed to discover a dead one. The three away from the newly-appearing shoot were very small, smaller if anything than before hybernation, actually 2.8mm. long, and very slender, those on the, no doubt, quite recent shoot were a little larger.

It would, therefore, appear that, when all circumstances are favourable for renewed activity in the spring, if food is present, all goes well, but if it is not, the larvæ can prolong their winter activity without serious damage for at least six weeks (no doubt allowance must be made for the weather during much of the period not being of a forcing character). But if they obtain food, and make more or less progress, and are then starved, they die within the total period of six weeks, which has been comparatively harmless to their apparently more ill-used brethren who have had no food at all.

I ought to state that the two pots were out-of-doors, exposed to the same weather together.

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### **Fredericina calodactyla (zetterstedtii).**

By T. A. CHAPMAN, M.D.

Mr. Goodwin's notes on this species in *Ent. Record*, vol. xxi., 1909, p. 205, interested me very much, and I am indebted to him for the opportunity of verifying the point that seemed of most importance, *viz.*, the habit of the pupa of leaving its puparium for emergence. I was not only able to verify this, but to note that the pupa emerged in this way, and again retreated if disturbed, for at least some days before emergence. I further found that the emergence of the pupa to a dangerous or inconvenient extent is checked by a cremastral silken cable. The length of freedom allowed being approximately the length of the pupa.

My notes are that on May 23rd, 1910, Mr. E. Goodwin, of Canon Court, sent me some material of *F. calodactyla (zetterstedtii)*. One of the larvæ, in its burrow in the heart of the growing stem (or almost rootstock) of *Solidago*, was laid up for its moult to pupa, which occurred a day or two after. Looking at it frequently, I noticed nothing particular in connection with it till June 2nd, when I observed the pupa well above its usual level in its burrow or cocoon, it might almost be called projecting; looking more carefully, I very shortly shook or otherwise disturbed it, when it at once retreated to its usual position, doing so quickly and actively, and making some active movements when I so



far disturbed it as to get a fair view of it in its retreat. Its advance was such, as I judged on this further examination, as to amount to about three-quarters of the length of the pupa, or so as to bring the wing-tips to about the usual level of the head. There was no question of the pupa being ready to emerge, as the whole of the head and wings were pale in colour, though with the opaque aspect of commencing maturity. It seemed as if the object might be to obtain some sunshine, but it might have been regarded as a provision for keeping the opening above from being closed by the further growth of the plant, *i.e.*, of the leaf-bases surrounding the opening, or again perchance to escape some exudation of sap into its cocoon.

On June 8th, the moth emerged, and the empty pupa-case was well above the cocoon, if its puparium can be so called, and if the disturbance it had undergone from my examinations, and the short journeys of the pupa itself had left what might be called its upper end. On close examination, however, it was found that the pupa-case was 10.5mm. long, and that the cremastral end of the pupa-case was 11mm. from the base of the excavation forming the puparium. The cremaster of the pupa was firmly held by a silken cable, which was stretched straight, and descended 5mm. or 6mm. before it was merged in the other silken spinning, lining (very weakly) the puparium.

The pupa-case was not, therefore, at liberty to leave its tube further than it had done. The cable seems to hold the pupa from further advance when the imago is leaving it, otherwise the imago would fail to escape and would drag the pupa-case with it. A similar provision exists in many Tortricids whose pupa-cases leave the puparium.

The interest of this curious habit is by comparison with other Platypylliids. In *Gillmeria (ochrodactyla)*, etc., we have the usual plume habit of a fixed external pupa. In *Platypyllia (gonodactyla)* an enclosed pupa that does not, however, emerge. Neither does *Adaina microdactyla* (an Alucitid), also an enclosed pupa. Though the structure of the plume pupa is that of the *Incompleteae*, this retention of the typical habit of the incomplete pupa is certainly rare in the group. A not dissimilar habit in *Oxyptilus*, which has a similar larval existence, is associated with a loss of cremastral hooks, and seemed to me to be possibly a re-acquired habit, it may, however, be by immediate descent from some relative of *F. calodactyla*. Some *Oxyptilids* have the usual plume external habit of pupation.

This primitive habit, characteristic of the incomplete pupa, is a strong point, which I was not aware of, when urging that the Platypylliids were the most ancestral group of plumes that I had examined, in support of that view.

### Variation of *Vanessa io*, L.

By T. REUSS.

(Concluded from p. 141.)

It might throw some light on these different results from the effect of "contrasts of temperature" on pupæ from wild-grown British larvae, when I say that broods of *Vanessa io* (or *V. urticae*) reared under stimulating contrastless temperature conditions from the early stages will often vary from the type, but among themselves the individuals of

the brood will, on emergence, be alike to an unusual degree, and this brings me to a point which baffled me for a long time. I have bred under different conditions both Continental pupæ and British (insular) pupæ of *V. io* and *V. urticae*. It was first with British pupæ of the latter species that I found it impossible to produce the same results by the influence of high temperature, as with continental pupæ (*vide antea*, pt. 4, 1909). There was comparatively less change in the former. The pupæ from insular larvæ resisted the influence of high temperature much more than did the pupæ from continental larvæ. On the other hand, the insular pupæ gave way more easily to the influence of cold and darkness than the Continental ones. One of the reasons for this appears to lie in the *contrastless* insular climate (*vide Entomologist*, vol. xlii., p. 311) due in great part to the *humidity* of the atmosphere. This influence would *in nature* mainly take effect in the larval stage. That the British climate exercises a special influence is well known. In many moths it induces melanism, more or less indirectly, and favours certain atavic forms (*vide* Tutt, *Melanism and Melanochroism in British Lepidoptera*, pp. 42, 43). The effect on *V. io* and *V. urticae* appears most plainly in their uppersides\*—the influence on these species is not too strong, and their undersides (comparable, so to speak, with the upperside forewings in most moths) are too well adapted to their habits to be much altered—and from the results of my breeding-experiments with pupæ which plainly were affected by constitutional tendencies in the larvæ, I suggest that especially specimens of *V. io* ab. *claraviolacea* (compare the insular forms of *V. io* var. *geisha*, Japan, var. *sardoa*, Sardinia, also specimens from continental Asia), but also ab. *nigrifasciata*, are characteristic of the British insular climate, and in *V. urticae* the same seems to be the case with ab. *flavotessellata*, Rynr., ab. *salmonicolor*, Rynr., and ab. *infusca*, Rynr. The ab. *infusca* is sometimes very dark red-brown in the ground-colour (when stimulating conditions of development act with the constitutional tendency induced by humidity), more often it is pale brown-yellow, covering the tendency to var. *polaris*. Larvæ are thirsty creatures generally, and, in a climate in which the sun's heat is not very great, humidity of the atmosphere (suggesting condensation as opposed to evaporation induced by dryness) would draw less on the resources of their bodies than would dry air. This effect is clearly noticeable in the perfect insects in Britain (compare *Drinking Habits in Butterflies and Moths*, p. 2, by Mr. Tutt) which rarely congregate in numbers round puddles, etc., on roads (I myself only witnessed one case) as they do in lands where the sun is hotter, clearly proving that these insects are less thirsty in a contrastless temperate climate. Near Desenzano, on the Lago di Garda, I once in August found the road alive with "blues," and with a cyanide-bottle two inches wide at the mouth, I covered 53 specimens of the short-tailed blue (among them were two females) which had assembled thus closely to drink.

\* The uppersides of butterflies, which rest with closed wings, do not come under the influence of "selection of the best-protected" as do the uppersides of moths, which rest with wings spread out, and therefore the uppersides of butterflies with their bright colours are specially well-fitted for the study of the direct action of meteorological factors.



## Coleoptera in the Isle of Wight, with a few additions to the fauna of the Island.

By J. TAYLOR, F.E.S.

Two interesting additions have been made to the Isle of Wight list in *\*Elaphrus uliginosus*, F., which Mr. Donisthorpe tells me Dr. Joy took on the banks of the Yar, between Freshwater and Yarmouth, and *\*Ilobates forticornis*, Lac., taken by Dr. Nicholson at roots of grass near Sandown at the end of March. The following species with asterisk are also additions:—*\*Oxyptoda vittata*, Märk., with *Lasius fuliginosus*, Ninham, near Shanklin (Taylor). *\*Myrmedonia funesta*, Gr., with *L. fuliginosus*, Ninham (Donisthorpe). *Myrmedonia laticollis*, Märk., was taken with the same ants in numbers. *\*Notothecta confusa*, Märk., with *L. fuliginosus*, Ninham (Donisthorpe). *\*Bolitobius exoletus*, Er., in fungus, Sandown (Taylor). *\*Mycetoporus angularis*, Rey, from a heap of vegetable refuse, near Sandown (Taylor). This species, although so distinct when mounted, might easily be passed over in the field for *Heterothops*, if one had not seen it alive before, and were not expecting to find it. *\*Quedius vexans*, Epp., in moles' nests, December to March, Sandown (Taylor). *\*Philonthus longicornis*, Steph., Alverstone (Taylor). *\*Stilicus fragilis*, Gr., under withered grass, Sandown (Taylor). *\*Stenus juno*, F., at roots of grass, Sandown (Taylor). *\*Choleva spadicea*, Stm., Niton (C. J. C. Pool). *\*Hister marginatus*, Er., in moles' nests, Sandown (Taylor). *\*Cryptophagus subfumatus*, Kr., in stale muscatel raisins, Sandown (Taylor). *\*Ptilinus costatus*, Gyl., in wooden base of scales in chemists' shop, Sandown (Taylor). This insect was kindly named by Captain Deville; it is, of course, probably introduced, but I think not in the wood from which it was taken, as the scales have been several years in Sandown, and show very few traces of boring. The beetle is common in France, but I believe has not been noticed in Britain before. *\*Rhagonycha limbata*, Th., Bordwood Copse (Taylor). *\*Anaspis rutilabris*, Gyll., Greatwoods, Shanklin (H. F. Poole). *\*Lochmaea suturalis*, Th., swept off *Erica*, Parkhurst Forest (Taylor). *\*Phyllobius calcaratus*, F., Alverstone (Taylor). *\*Acalles turbatus*, Boh., Gatecombe (Jeffery).

In moles' nests near Sandown have been taken in some numbers—*Aleochara spadicea*, Er., *Heterothops nigra*, Kr., *Quedius vexans*, Epp., *Hister marginatus*, Er., and *Onthophilus globosus*, Ol., and single specimens of *Quedius longicornis*, Kr., and *Medon castaneus*, Gr. The two latter were taken in December in a dry sandy field close to but higher than the marshes, the nest being of grass; the other species occurred in this and similar fields, and in the marshes indifferently, and until as late as the end of March. The *Heterothops* was, of course, the most abundant, and the *Aleochara* next. I believe moles' nests have not been worked in the Island before.

At Lucombe Chine the best part for collecting is unfortunately nearly ruined for a time by the falling of sand from the cliff above burying everything to the depth of three or four feet. These occasional falls from the cliff must, I think, account for the disappearance of some of the best species formerly taken at Lucombe; at the same time they prevent the undercliff from getting so overgrown with gorse, brambles, etc., as to be unworkable. That is the state of other parts of this undercliff where no falls have taken place in my remembrance. In a few years after such a fall the tiny streams which trickle over the

cliff form little channels and swamps in the sand, rushes, reeds, etc., grow again, and the few beetles not destroyed recover and spread once more. Last year the ground was recovering, and *Drypta*, which had not been found there for many years, was taken in some numbers, together with other good species. This spring only one *Drypta* has been taken, after much hard searching. Among other things at Luccombe Chine were taken *Badister sodalis*, Duft., *Agabus nebulosus*, Först., and *Atemeles emarginatus*, Pk., the last crawling on the sand at some distance from the nearest ants' nest.

### A June day's Lepidopterological observations on the Folkestone Downs.

By JAMES BELL.

The morning of June 19th, 1910, was perfect for entomological work at Folkestone; the morning was clear, bright, hot, and sunny, the sky at 11 a.m. blue and absolutely cloudless, the downs covered with blossoming wildflowers, and yet lepidoptera were only moderately abundant. Never before have I seen the slopes such a mass of bloom, and the yellow heads of *Lotus corniculatus*, *Hippocrepis comosa*, and *Anthyllis vulneraria* made a golden flower-carpet not to be excelled by any of those described so picturesquely in *Rambles in Alpine Valleys*, p. 162. Here and there masses of *Helianthemum* bloom helped the leguminous plants, but their abundance covered the slopes with a blaze of brilliant beauty.

The white butterflies were apparently nearly over; at any rate, neither *Pieris brassicae* nor *P. rapae* were abundant, the first-named commoner than the latter; whilst, on the slopes itself, *Agriades thetis* was perhaps the commonest butterfly, but this was going over, and many of the specimens were very worn. The ♀s captured were all strongly scaled with blue, not differing though, in this respect, from those of last September in the same place (*Ent. Rec.*, xxi., pp. 226-7), but both sexes were much less abundant than then. Like almost all species that go over the winter as larvæ, however, there was a great deal of difference in their condition, and a few of both sexes were quite fresh, and evidently recently emerged. This species was widely spread over the downs, and the ♂s apparently much more abundant than the ♀s, although the brood must have been nearing its end. *Polyommatus icarus* was quite rare, not a dozen were seen altogether, and only two or three ♀s, these, as usual, strongly scaled with blue, there being apparently, at Folkestone, as in most other British coast localities, no difference in this respect between the spring and summer broods. A single ♂ *Celastrina argiolus* was observed swinging itself over the bushes, and a couple only of *Aricia astrarche* were noticed. These were both small in size, and appeared to have a particularly zigzag method of flight, especially when compared with the long sweeping curves of *A. thetis* and *P. icarus*. Quite common was *Cupido minimus* in the grassy hollows, where it flitted actively from one point to another, settling down on grass culm, flower, or bush to twirl its wings in the manner specially affected by the "blue" butterflies. Hardly had a specimen of either sex settled in the sun before the wings were opened and the movement began. The dark colour of the upperside of *C. minimus*, compared with its underside, makes it at the



same time both difficult to follow, and yet when seen very conspicuous, allowing it to disappear suddenly when the eye is fixed on it, permitting it to appear quite suddenly three or four yards further on when the underside is again turned towards one. It appears remarkable, too, how really "blue" this insect looks when on the wing, especially with the rising downs covered with brilliant yellow and green forming a background, as it flits rapidly from one point to another well above the herbage. Whether this is entirely due to the pale blue-grey underside or the contrasting effect of the light and dark under- and upperside respectively it is difficult to say, but the result is certain, and the "blueness" of *C. minimus* on the wing is most marked. It is an assertive little species also, attacking with the utmost impertinence both *A. thetis* and *P. icarus*, driving them from its beat, to which it returns again and again with unwonted pertinacity; it is, however, much slower on the wing than either of its larger relatives, and when it attacks them, it is amusing to see how soon it is left behind. No paired examples of *A. thetis* were observed, but one pair of *P. icarus* were sitting exposed on the top of a plantain flower, about noon, but several pairs of *C. minimus* were observed, rather conspicuously it seemed, on the grass culms towards the end of the afternoon, the pairing evidently taking place then and not earlier in the day, as is so often the case with *P. icarus*. The most common butterfly of the downs, however, appeared to be *Coenonympha pamphilus*, which got up at every footstep, and was in first-class condition; at least two dozen were overhauled to see if there was any variation in the spotting, but without result, although one or two examples were particularly strongly marked towards the base of the underside of the hindwings with a rich mahogany-brown (ab. *brunnea*). *Epinephle ianira* were only just coming out, two or three very fine dark ♂s alone being observed. *Nisoniades tages* was going over, but still, some of the specimens were in not at all bad condition, and the species would, one supposes, still last some days; on the other hand, *Argiades sylvanus* was just out, and dozens of beautifully rich-coloured ♂s rushed about everywhere, not a ♀ was observed however. These were practically the only butterflies seen.

Flitting almost everywhere among the flowers was *Euclidia glyphica*, quite fresh and in good condition, whilst very abundant, at the foot of the downs, was the little *Emmelesia albulata*, which came up at every footstep, beautifully fresh, with an abundance of golden-brown transverse markings; with it, literally in hundreds, was *Botys fuscalis*, varying greatly in size, more readily disturbed, perhaps, than the last-named species. Very common, too, was *Scoparia dubitalis* var. *ingratella*, the ground colour very white, as might be expected here, although very few had the markings reduced to the extent that is so frequent on the cliffs to the north of Dover. Occasionally *Strenia clathrata* flitted ahead of one, but *Camptogramma bilineata* was very common, all the specimens apparently quite bright golden colour with pale transverse lines, and none with the remarkable band (ab. *fasciata*) of those of the London gardens, where the ♀s appear to be particularly large and strongly-marked in this direction. A beautiful ♂ *Euthemonia russula* softly rises and gently flutters off in the breeze, settling a dozen yards or so higher up the steep banks and necessitating a climb to see that it was freshly out; no amount

of searching, however, could discover a ♀, although two or three other ♂s were put up. A bustle, just above the herbage, and a scurry up the slopes, again and again during the afternoon, told of ♂ *Macrothylacia rubi* on the wing. This species is very abundant here, but one rarely finds either the cocoons or ♀s, although in the late autumn the larvæ are abundant enough. The chalk-pit at the top of the hill was a perfect picture of blooming *Anthyllis vulneraria*; never before have I seen anything to equal its abundance or beauty. Among it, on the summit of the more exposed overgrown heaps of chalk, the *Tussilago farfara* lay buried, but the imagines of *Platyptilia gonodactyla* came up quite freely as I walked knee-deep among its foodplant and the *Anthyllis*. A single *Alucita pentadactyla* was also disturbed, the species evidently just emerging. Here and there with brilliant wantonness a few masses of purple-blue *Echium* contrasted splendidly against the overwhelming masses of yellow bloom that reached almost everywhere, but with the exception of a few larva-cases of *Coleophoraonosmella*, nothing special was found on it. Only one other insect, perhaps, should be recorded, viz., a single imago of *Nola strigula* found resting on the trunk of a sycamore by the wayside in the village before one reaches the famous Raindene wood, a walk through which, with the exception of *Melanippe montanata*, produced nothing.

But such a June day as this lives in the memory, and makes one glad one is a butterfly-hunter. The brilliant sun, and fresh air, the spring flowers and delicious greenery, make a day on the downs something to be remembered in the dark winter days that follow, and certainly lay up a store of health against the insidious attacks that town life makes even on the most physically fit of our entomological fraternity.

### Comparative Notes on the Egg-laying of *Aglais urticae* and *Vanessa io*.

By T. REUSS.

From May 3rd to June 3rd, I have obtained ova from sixteen ♀s of *Aglais urticae*, and four ♀s of *Vanessa io*. In each case I witnessed the ♀ in the act of ovipositing; there were also numbers of cases observed in which the ♀s did not settle to lay, although they attempted to select a leaf for doing so. In all cases, both the *A. urticae* and *V. io* ♀s were interested in the leaves near the top of the nettle-plants, whilst the nettle-buds were often tested with the antennæ, but the ova, except in one case when an overhanging nettle-top offered the necessary foothold, were laid on the underside of a larger nettle-leaf. The egg-laying observed, took place chiefly in the morning; one ♀ of *V. io* laid from 12 (noon) till past 2 p.m. Towards the end of May as many as four ♀s of *A. urticae* were observed ovipositing at the same time, and at one spot not far from each other. While ovipositing, the two front legs of the butterfly hold fast to the upperside of the leaf; the preliminary tests with the antennæ, and certain jerks of the head,\* are the same in both species. In two cases stunted nettles were selected, once by ♀ *A. urticae*, and once by ♀ *V. io*, the nettle even looking yellow and sickly in the latter case. These nettles stood apart near rich patches of the

\* Observed to be continually made while courting by the ♂, which as continually taps the wings of the ♀ in front of it with its antennæ; when the ♀ closes her wings, the ♂ moves round to one side.



plant, and I noted four other cases in which nettle-plants, growing separate, were chosen. Once I found three clusters of *A. urticae* ova underneath a single leaf, which ova I had not seen laid, and there was a fourth cluster higher up on the same plant, which had evidently grown very much since the deposition of the first three batches of eggs; the leaf with the three clusters of ova was nearly at the base of the plant, and was twisted and deformed in growth by the resistance offered by the well-glued batches of ova to the spread of the leaf tissues. Two of the egg clusters had been torn asunder by the growth of the leaf. The ova of *A. urticae* were laid in a raised heap, compact and roundish; those of *V. io* spread over a greater surface in an also very compact but "flatter" batch. The ova of *V. io* were often twice or three times as numerous as those of *A. urticae*, an apparently full cluster took nearly two and a half hours to lay, while I have only once seen an *A. urticae* laying longer than three-quarters of an hour; then the specimen was a ♀ of unusual size. This ♀ laid an exceptionally large batch of ova, which was as "wide-spread," as one of *V. io*, and the time of laying was over an hour and a quarter. The size of the ova appears to be the same in both *A. urticae* and *V. io*; their number in one cluster is evidently proportionate to the size of the females, so also would appear to be the duration of laying. The females of both species do not always appear to lay their ova all at one time, *A. urticae* ♀s occasionally laying only part of their ova on one leaf, while *V. io* ♀s, even if actually disturbed, will try to return to their ova and continue laying on the same leaf.

So far, I have seen the ova of *A. urticae* in all shades of green, from bluish-white to almost yellow. They keep their colour very well from the moment of egg-laying till a day or two before the emergence of the larvæ, when they turn grey. Bluish-white and yellowish-green ova were found in one batch—the larvæ from them were normal. I have only seen the ova of *V. io* in bluish-white to blue-green, although they have also been reported to be yellow in colour (olive-green). The ova of *V. io* are easy to mistake for those of *A. urticae* unless magnified, when their most apparent differences are shown, consisting in a smoother surface, and in that the ridges of transparent cells are not so much raised as in ova of *A. urticae*. I have found the ridges to vary in number from seven to nine in *V. io* ova (all found in a single brood) and eight to ten in *A. urticae* ova, the number ten appearing only in one brood of the sixteen, together with the numbers eight and nine.

While ovipositing the females of *V. io* seem often to be disturbed by females of *A. urticae* when such fly near. The first time I saw a ♀ *V. io* ovipositing, the insect had been laying for about an hour, a ♀ *A. urticae* then suddenly appeared, flying searchingly above the nettles, and at once swooped down upon the *V. io* ♀, causing the latter to fly off, while the *A. urticae* settled at once in the exact position of the *V. io* ♀ and commenced laying a cluster of ova beside that of *V. io*. The *V. io* ♀ was chased and courted for a few minutes by a *V. io* ♂, the two behaving much like cock and hen sparrows. Then the ♂ flew off and the ♀ flew straight back to the leaf where it had laid its eggs. It found the *A. urticae* ♀ in possession and fluttered round in a disturbed way. The *A. urticae* ♀ only jerked its head a few times, otherwise it would not move, and, after the two had warily tapped antennæ together from opposite sides of the leaf, the *io* gave way to the

smaller species and flew off. I captured it with difficulty some two hundred yards away. On May 20th my attention was attracted to a yellowish-leaved stunted nettle by a ♀ *A. urticae*, which fluttered round it. I then saw a ♀ *V. io* ovipositing under one of the leaves. The *urticae* ♀ continued to fly round and sometimes to buffet the *io*, which latter, however, would not stir, when, to my astonishment, the *A. urticae* got on to the leaf beneath, and behind the *V. io*, and fairly pushed the larger species from its position. The *V. io* flew away and settled in the road; the *urticae* this time did not take the place of the *io*, but after searching a few minutes it selected and settled on a leaf a few inches away, in the usual position for egg-laying.

Meanwhile, the *io*, which had only deposited about a dozen eggs, sailed about the road in the usual way, then suddenly made a bee-line back to the yellow nettle, and taking no notice of the *urticae* ♀ close by, it fixed itself on the leaf as before, and laid eggs for over two hours. The *A. urticae* was taken by me from its leaf after about 40 minutes, when I supposed there would be enough eggs, and I did not want to risk losing the ♀, which is hard to capture after ovipositing. I then found out that very curiously it had laid no ova at all, its body being still quite full of them.

I only once saw a ♀ *A. urticae* disturbed by one of its own kind while ovipositing, when the female did not return to its ova, although it had not nearly laid the full number. Though ♀s of *A. urticae* passed very often near or over those that were ovipositing, they were not attracted to them as to *V. io*. Whatever this attraction may mean which *V. io* has for *A. urticae*, it certainly does not seem to be reciprocated by the larger species, which, indeed, appears to be much disgusted at the bullying attentions of the smaller butterfly.

The numbers of larvæ of both species which I have since found, all showed by their sizes and dates of appearance, that *A. urticae* ♀s had laid no eggs this year before May, and *V. io* ♀s not before May 15th-20th. After June 3rd both species disappeared suddenly. The height of the egg-laying season for both species fell in the last days of May.

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### Lepidoptera of the Tirol—Meran.

By J. W. TUTT, F.E.S.

It now became necessary to make another move. There routes were possible (1) due east into the Val d'Ampezzo district, which we worked well, but did not write up in August, 1895, (2) south to the Lake Garda district, or (3) west to the foot of the Stelvio. Our minds were soon made up and we plumped for the Stelvio, calling at Meran on the way. It was a lovely morning when we left Botzen, but long before we reached Meran we had entered a stormy patch. The Mendel mountains, so beautiful the preceding day, were enshrouded in storm-clouds, and thunder and lightning were the order of the day. At Meran station we were held up for about an hour and a half whilst the heavens flooded the town, and afterwards diggings had to be obtained, and we settled ourselves down with such degree of comfort as could be obtained. Next day, August 10th, was also stormy but not raining, so about 10 a.m. a start was made for the Passeierthal, but the weather was too threatening for a long walk, and the country too



wet to get far from the main road. Hence, as may be expected, the entomology that we did at Meran was practically nil, and all the captures were made in the course of two or three breaks of sunshine, each of which could not have lasted much more than ten minutes apiece. One supposes it will be considered a sign of great weakness entomologically to confess that the two species that interested us most were *Epinephele tithonus* and *E. ianira*. The former was a much larger and more deeply orange race than our British examples, the ♀ especially fine and rich in colour (= var. *meranensis*), whilst the apical spotting, usually one large ocellus with two white spots, and varying much in size, was sometimes disintegrated, so that the lower half, small and almost separated, had no white pupil, leaving only one for the upper spot (= ab. *unipuncta*). The *E. ianira* ♂s were dark, with little or no fulvous around the ocellus; the ♀s were large, the fulvous area large and very pale, almost yellowish, the ground colour pale fuscous, the underside also pale, of two forms, one with the basal area of hindwings and apex of forewings of a chamois-leather tint, scaled strongly with yellow towards the bases of the hindwings, the other with these areas strongly tinged with grey (= var. *meranensis*, ab. *flavescens*, and ab. *griscens*). Of course, these are nothing like the giants in size captured in Malta and other Mediterranean districts, but still they are very striking when compared with our western examples. In one meadow we came across a brood of *Brenthis dia*, evidently out that very morning; whilst not far from the city among some thick herbage on the outskirts of some wooded ground, we disturbed some ♂ *Enodia dryas*; in the same place worn *E. hyperanthus* showed that this species was over. Over the bushes here, *Celastrina argiolus* and *Polygonia c-album* were both noticed ovipositing, the latter very worn, and evidently not yet reached the hibernating-brood. Like the *Epinepheles*, the few *Coenonympha pamphilus* were very bright and yellow in colour. *Polyommatus icarus* was of the form *icarinus*. A ♂ and ♀ *Rumicia phlaeas* showed none of the marked darkness of colour that one might have expected here, whilst several ♀ of *Loweia dorilis* although not very dark were not so brightly red as again one might have supposed. A single ♂ *Everes alcetas* gave hopes of more, but these were doomed to disappointment, whilst a solitary ♂ *Urbicula comma*, a species only just emerging, closes the list of butterflies observed except *Leptosia sinapis*, which fluttered about in sunlight and shade without much break. A fine chocolate-coloured ♂ *Lasiocampa quercus*, similar to that taken in the Sarnthal, was made prisoner. A piece of marshy ground covered more or less with bushes proved interesting; swarms of *Pyrausta cespitalis*, *Crambus sylvellus*, and *C. pratellus* came up at every footstep, whilst *Hyria auroraria*, *Minoa euphorbiata*, *Timandra amataria*, *Cabera pusaria*, and *Melanippe sociata* made up a family of Geometrids almost like those of an English back garden. An immense bed of large white convolvulus which had spread for twenty yards or so in all directions, produced thousands of *Alucita pentadactyla*, and a single fine cinnamon-coloured *Emmelina monodactyla*; we have rarely seen a more beautiful sight. Most unexpected, however, was the occurrence of a specimen of *Nola centonalis*, but a good half-hour's work produced only two more. A poor list, perhaps, but not an uninteresting one for a dull, sunless and damp day.

## Lepidoptera of the Tirol—Neu Spondinig.

By J. W. TUTT, F.E.S.

Next morning broke finer, and the inexorable wheel of necessity moved us on, and about noon of August 11th we found ourselves settled in the comfortable inn at Neu Spondinig, at the foot of the Stelvio on the Austrian side. Exactly twelve months earlier I had rushed through the village on the top of a diligence, and I had mentally determined that, hot and blazing as it looked, I ought to return there some day. Behind the village, the road leads over the Adige on to Trafoi and the top of the Stelvio over the mighty Ortlers; directly in front, and coming down to the roadside the mountains looked bare, parched, hopeless, with a wilderness of knee-high, almost neck-high, thistles all along the foot. The foothills seem to consist of a sort of brecciated mud. Neu Spondinig itself is at an elevation of rather less than 3000 ft., and consists at present of the inn, a brand new railway station, and about three cottages, but as it is the necessary place of call and rest for everybody and everything going over the Stelvio, it is a very busy place. The species that I knew I should get at Neu Spondinig was *Hipparchia briseis* and I got it, as the series in all my friend's cabinets testify, and I still have others for other friends whose series are not satisfactory. In size the specimens vary from tiny pigmies (ab. *minor*) to examples as large as the huge races from Spain, southern Italy, and Asia Minor; the spots, usually two (*bipuncta*) in number, but here almost as frequently three (*tripuncta*), of which the middle one varies most in size. The butterfly abounds on the thistles all along the foot of the hills, resting in dozens on the thistle-flowers, or flying over the slopes and settling in the roadway; like all these Satyrid species the sexes have regular play-habits, quite apart from pairing, but although we often watched them took no notes on the spot. Much less abundant was *Hipparchia semele*, the ♀ with rich orange-fulvous markings (*clara*) particularly brilliant in tint, and occasionally with three ocelli (*tripuncta*) as in *H. briseis*; *Melanargia galathea* was also extremely abundant but already past its best; the ♂ s appeared to be particularly yellow as also were they on the Mendelstrasse, and in the Sarnthal. The form of *Epinephele lycaon* is small, the ♂ s dark and poorly spotted, the ♀ s orange-fulvous, the basal area of forewings suffused with the ground colour rather than fulvous, only one ♀ single-spotted (*unipuncta*), i.e., with only one apical eyespot. A piece of waste ground about a mile from the village swarmed with *Plebeius argyrognomon*. I was pleased to take three freshly-emerged *Melitaea athalia*. *Melitaea didyma* was apparently rare, the ♀ s captured pale, the ♂ s beautifully bright; *M. phoebe* was just emerging, large, dark, of the *alpina* form; a brood of *Pararge megera* was on the wing, almost all with a small ocellus near the apex of the forewing (*apiciocellata*); plenty of *Coenonympha pamphilus* were met with, as also *Hesperia alveus*, but a few worn *H. carthami*, one was quite fine, proved that this species was going over, and only one *Coenonympha arcania* was considered worth a pin. *Powellia sao* occurred very sparingly, a brood of *Erynnis alceae* was just on the wing, quite rich in colour, whilst a single *Urbicula comma* was the only one noticed in the district.

*Hipparchia cordula* was over, heaps of very worn fragments were everywhere, whilst only one Erebiid species was seen, *Erebia goante*,



and this was scarce. *Epinephela ianira* was just appearing, the ♀s very different from those taken at Meran, the fulvous patch deep and not pale in colour. *Issoria lathonia* was just emerging, the examples somewhat small though none the less active; *Colias hyale* also was just out, and the specimens small, whilst, on the other hand, some of the *Colias edusa* were among the largest we have ever seen. *Pieris brassicae* was just emerging in numbers and a few ♂ *Pontia daplidice* also looked as if a summer brood was on the move. *Leptosia sinapis* of good expanse, and *Gonepteryx rhamni*, variable in size and with very minute orange central spots (ab. *parvipuncta*) in both sexes, were both frequent, whilst the occasional stalking of a *Papilio machaon* in the road gave change to the collecting-work. Altogether these made a lovely sight, although our main quarry *Hipparchia briseis* would not be lost sight of. But we were disappointed with the Rurals, though the character of the soil somewhat precluded the hope of obtaining them in any numbers. Next to *Plebeius argyrognomon*, *Agriades coridon* was the commonest species, besides which *Polyommatus icarus* and ab. *icarinus*, *P. hylas*, singly, *Aricia astrarche*, very few, *Scolitantides baton*, two ♂s only, and *Rumicia phlaeas*, were all the species seen, except for a beautiful ♀ *Agriades* hybr. *polonus*, Zell., the only specimen yet recorded of this sex. There were no Anthrocerids seen, except one worn ♂ *Anthrocerus lonicerae*. On the other hand, *Syntomis phegea* was abundant, and from eggs then obtained, larvæ fed up during the winter, and the imagines appeared on June 21st, 1910, the pupal stage lasting about a fortnight.

But it was among the moths that we obtained most sport. A large electric lamp hung just outside our window, whilst those of the *salle-à-manger* proved a first-class attraction—such species as *Hyloicus pinastri*, *Eutricha quercifolia*, *E. populifolia*, *Porthetria dispar*, *Malacosoma neustria*, *Phragmatobia fuliginosa*, *Porthesia chrysorrhoea*, *Plusia chrysis*, *Arctomyscis euphorbiae* (myricae), *Hadena glauca*, *Agrotis tritici*, *Eremobia ochroleuca*, *Hydroecia nictitans*, *Emydia cribrum* var. *candida*, *Lithosia lutarella*, *L. unita*, as well as heaps of smaller fry, provided excellent sport.

One of the most abundant species in the district was *Spilodes sticticalis*, and this came to the lights of the inn in hundreds. It swarmed all over the slopes, settling on the ground, grass, and barberry bushes (which were very abundant), most active in the hot sunshine, but flying also at dusk as well as late at night. An occasional *Mecyna polygonalis* was also captured. Common also was *Anticlea berberata*, the dark alpine form. We came across a batch of *Amblyptilia cosmodactyla* (*acanthodactyla*), but very worn; *Adkinia bipunctidactyla*, *Emmelina monodactyla*, and *Merrifieldia tetradactyla* were also taken. *Scoparia crataegella*, *Ilythia carnella*, *Stenopteryx hybridalis*, *Pyralis glaucinalis* ab. *rufescens*, beautifully tinged with red, *Pyrausta purpuralis*, *Herbula cespitalis*, *Anerastia lotella*, *Acidalia rubricata*, *Strenia clathrata*, *Lithosia lutarella*, and many other species are among the captured. *Thalera fimbrialis* was not uncommon, but the specimens chiefly worn. *Crambus selasellus* and *C. perlellus* came to light in great abundance, having fed, no doubt, on the marshes that the Adige and the Trafoi-bach spread out between Neu-Spondinig, Mals and Prad. Neu-Spondinig is certainly an excellent place for the moth-hunter.

### Entomologists and Entomology at Oxford.

An invitation to the members of the Council of the Entomological Society and the members of the Entomological Club, to visit Oxford, by Professor E. B. Poulton, Hope Professor of Zoology, led to a gathering of the clans, at the delightful old city, from July 2nd-4th. In spite of the unsatisfactory state of the weather, a most enjoyable time was spent, and, as usual, Professor and Mrs. Poulton, Dr. and Mrs. Dixey, Dr. Longstaff, and Commander Walker did everything to make the guests as happy and comfortable as possible. Most of the visitors arrived on the Saturday afternoon, and soon found their way to the Hope Museum, where they were able to pay their dutiful respects to the host. To one who has not visited the Hope Museum for some years, great changes were apparent, the collections have now assumed a vastness that makes all the available rooms appear hopelessly insufficient, the corridors are filled with cabinets, and still large collections are in hand for which house room, or rather cabinet room, has to be found.

The necessity of building a new series of rooms for the students who are studying electricity, has recently set free one large well-lighted room, at least 80 ft. in length. This has been seized by the Hope Professor for the extension of his work, and is now in process of being dismantled, before the alterations are made that will enable it to become a suitable as well as a welcome addition to the present rooms that accommodate the collections. When this is ready for use, the Hope Museum bids fair to compete with the National Museum, if not in size, at least, in usefulness.

This latter is the predominant note struck when one begins to examine the material in the collection in detail. The system of labelling makes most of the specimens of the highest scientific value, and whether the specialist be studying variation, phenology, or geographical distribution, he finds a wealth of accurately labelled material which is of the greatest importance for his work.

Everywhere the directing hand of the Professor is to be seen, and the way in which he has effected his purpose in making the Hope Museum worthy of first rank among the entomological museums of Europe is self-evident, whilst the support that he has received from his co-workers and the curators under his charge is patent as soon as one commences to dip into the collection. The Pierines have been arranged by Dr. Dixey, and are, as may be supposed, in excellent order, but, in the general collection, the exceedingly efficient work of the three highly-trained curators—Messrs. Holland, Hamm, and Collins—is everywhere apparent; it would be difficult to find three more capable men, judged from the results of their labours, and adds yet another proof of our contention that our large National Collection, to be properly curated, requires a more effective staff, that each of the senior members should have two or three curators of the type of those at the Oxford Museum under his control, so as to deal, not only with the arrangement of the collections, but in order to get the large amount of undescribed material in the Museum put in order with the least possible delay. It is a real pleasure to be moving about among so much that lives in a Museum.

Towards the end of the afternoon a pretty fair assembly of well-



known entomologists was present, of whom Dr. K. Jordan was obliged to hurry off, bound for the Dauphiny Alps to meet the Hon. W. Rothschild in order to explore that lovely region. There were also Mrs. Burr, who accompanied Dr. Burr, Miss Walker with Commander Walker, Mrs. Dixey, and Mrs. Poulton, who kindly provided tea for the guests and the Museum staff.

About 6 p.m. Professor Poulton, Dr. Dixey, and Dr. Longstaff, who had made themselves responsible for the hospitality of the guests, led them off to prepare for dinner at Jesus College, and at 8 p.m. the company sat down to dinner with Professor Poulton in the chair. Among others who were then present were Professor Selwyn Image, Dr. M. Burr, Dr. F. A. Dixey, Dr. Longstaff, Commander Walker, Messrs. G. T. Bethune-Baker, Borrer, J. Collin, H. St. J. K. Donisthorpe, H. Eltringham, A. Harrison, H. Main, Guy Marshall, J. W. Tutt, G. H. Verrall, M.P., etc., after which an adjournment was made to the Common Room, and informal chat occupied the evening until the hour was getting late. Entomological matters by the score were discussed and settled—until they should come up for argument again.

The morning of the 3rd was stormy, but by 10 a.m., with our various hosts for the night, the company adjourned to the museum, where everyone was soon at work, and the hours passed happily enough till lunch time arrived. It was only possible to look here and there into the collection, but one could not help feeling astonished at the huge amount of material that had been collected. The "Dale collection" also attracted a great deal of attention. The weather unfortunately spoiled the projected trip up the river, and, after meeting at the Museum, an adjournment was made to Professor Poulton's house, where again Mrs. Poulton served tea. Dinner at Wadham College with Dr. Dixey, or at New with Dr. Longstaff, was the next order of the day, and a meeting in the Common Room at Wadham closed the evening. Unfortunately the writer and two other guests had regretfully to leave for town, but the rest of the party stayed on until Monday, when a most enjoyable visit was brought to a close. The kind generosity of Professor Poulton, the good-humoured bonhomie of Dr. Dixey, and the unfailing geniality and good nature of Dr. Longstaff, as well as that of the members of the Museum staff who gave up their week-end to add to the pleasure of the guests, will make the Oxford visit of 1910 one to be long-remembered by those who had the good fortune to take part in it.

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### Early Summer amongst the Butterflies of the Rhone Valley.

By JOHN ALDERSON.

Last summer I had the pleasure of spending six weeks amongst the Swiss butterflies. As this was my first experience of Swiss collecting, I was naturally very anxious that the weather should be favourable, and so permit me fully to realise the entomological delights of this most charming country, but, in this respect, I was grievously disappointed, for, during the major part of my stay in Switzerland, the weather was most unsuited to the pursuit of entomology, and although there lingers in my memory the remembrance of one or two most delightful days, when the sun blazed from a cloudless sky, and butterfly-life was in abundance, yet I do not think I have brought

away with me a true impression of the real wealth of Swiss butterfly-life in its most favourable aspects, for the best weather occurred during the early part of my stay, when only a comparatively small number of species had made their appearance. Still I had no great cause for complaint. I made the most of my time, and, during the six weeks I spent in the Valley of the Rhone, I came across no fewer than one hundred and six species of butterflies, of which I was able to take specimens of all except three species, which, to anyone accustomed to collecting only in the British Isles, is not a bad result.

Acting on the advice of Mr. Wheeler, who most kindly furnished me with a mass of the most valuable information with regard to routes and the most favourable localities, I decided to work the Rhone Valley from different centres, keeping to the lowlands generally on account of the early nature of my visit—May 16th to June 25th. Aigle was chosen as the first centre, and, when I arrived here about 10.30 on the morning of May 16th, the outlook was distinctly promising, for the sun was shining brilliantly. The first insects seen were *Pieris rapae*, *Pararge megera*, *Celastrina argiolus*, and *Gonepteryx rhamni*, which were flying in the spacious garden attached to the Hôtel Beau-Site, where I stayed during my stay at Aigle.

After lunch, I walked along the main road in the direction of St. Triphon. The weather conditions were now less favourable, for heavy clouds were forming, shutting out the sun at intervals. Immediately after leaving Aigle, some grass land to the left of the road attracted my attention on account of the number of insects flying about. A good proportion of the butterflies were "blues," and, on netting them, the commonest proved to be *Cyaniris semiargus*, in prime condition. It was indeed a most pleasurable experience to see this rare British species flitting about as commonly as one sees *Polyommatus icarus* in our English meadows. Flying in company with *C. semiargus*, in equally prime condition, and almost as common, was *Cupido osiris* (*sebrus*), although I did not distinguish between the two species at the moment of capture. *Cupido minimus*, in fewer numbers, was flitting here and there. *Euchloë cardamines* was common, but showing signs of wear. A few *Colias hyale* were frequenting the blossoms of clover and other flowers, and I very much admired the fine powers of flight possessed by *Papilio machaon*, which I saw on the wing here for the first time. At the foot of the wooded hill, *Leptosia sinapis* was common and in good condition, with occasional worn *Brenthis euphrosyne*; while hibernated specimens of *Gonepteryx rhamni* and *Vanessa io* were dashing backwards and forwards. A solitary worn specimen of *Erynnis alceae* was taken here, with single examples of *Issoria lathenia*, worn, and *Brenthis dia*. After an hour's collecting in this place, I moved further on, crossing the road, and taking the footpath leading through the St. Triphon marshes. Here, in the fields adjoining, I found enough butterflies to engage my attention. The majority of the species already noted were seen here in greater numbers, and, in addition, *Melitaea aurinia*, nicely varied, but getting rather worn, with *M. cinxia*, in prime condition, were found. An *Erebia* flying steadily just above the grass attracted attention, and on netting, it proved to be *Erebia medusa*, its fine condition showing it to be evidently just emerging. *Hesperia malvae* was occasionally noted. An insect with a pronounced "copper" flight turned out to be *Loweia dorilis*,



two or three specimens of both sexes being taken. *Euthemonia russula* was not uncommon, several being disturbed from the grass. *Euclidia glyphica* and *Strenia clathrata* were absolute pests, starting up at every step, whilst *Scoria dealbata* was also very common, a cocoon of this species being found on a grass stem. *Ematurga atomaria* and *Melanippe sociata* were other species of moths noticed. After heavy clouds had taken possession of the sky, very few insects were seen on the wing, although a few *Cyaniris semiargus* and *Cupido osiris (sebrus)* were picked off the grass stems.

On the following day, May 17th, it rained almost incessantly from early morning until late afternoon. In the evening a search for "blues" at rest in the locality of the previous day did not prove productive, as only two *C. semiargus* were seen. The continued rainfall had evidently driven the insects further down amongst the herbage, which was too wet to permit of a more thorough search being made.

The next morning opened fine, but colder after the heavy rain of the previous day, and the aspect of the sky was not very reassuring. I took the train to Martigny for Branson, in the hope of being able to find *Scolitantides orion* in the latter locality. On reaching Martigny the sky was clearer, and the sun was shining with increased power; afterwards it turned out a gloriously fine day, with the sun shining brilliantly, although a rather strong wind prevailed. Solitary examples of *Glaucopsyche cyllarus* and *Celastrina argiolus* were taken soon after leaving Martigny. On the roadway leading through the fields to the Rhone, numbers of *Cyaniris semiargus* and *Cupido osiris (sebrus)* were sitting. Near the bridge *Colias hyale* was flying in numbers, and an occasional *C. edusa* was noticed. Crossing the bridge over the Rhone, the footpath to the left was taken along the banks of the canal. Flitting about the path were numbers of *Plebeius argyrognomon* in fine condition, with occasional *Pararge megaera*, equally fresh. A single *Everes alcetas* was taken here, and both *Hesperia malvae* and *H. serratulae* were netted. One or two specimens of *Iphiclides podalirius* were flying up and down the canal channel, but always at a tantalising distance from the net. *Pyrameis atalanta* and *Vanessa io* were both noticed hereabouts. A search for *Scolitantides orion* amongst the rocks and vineyards on the opposite bank of the canal was unsuccessful. A few *Issoria lathonia* were seen; its habit of settling on the bare patches, and then dashing off as one approached, being very provoking. Returning to the Rhone bridge, I made for the rocks in the vicinity of Branson village. As I approached, a small dark butterfly was netted as it flew off the rock face, and proved to be *S. orion* in excellent condition. I worked all the rocks hereabouts very carefully, but only found five more specimens, two of which were too worn to keep. Large green lizards were basking on the rocks in the brilliant sunshine, and from a neighbouring copse a nightingale burst out in full song. Numbers of butterflies were flitting about the grass and lucerne plots lying between Branson and the Rhone. *Pieris rapae* and *P. napi* were common and typical, and a single ragged *Pontia daplidice* was netted. *Aporia crataegi* was fairly common, and in fine condition. A few *Melitaea cinxia* and *M. parthenie* were flying about the grass plots. Amongst the "blues," *Plebeius argyrognomon* and *Polyommatus icarus*, including ab. *icarinus*, were fairly common; *Agriades thetis* was less common, and *Aricia astrarche* occurred sparingly. All were in fine condition, in fact, the fine

condition of the majority of insects taken was the most gratifying feature from a collector's point of view. Amongst the "skippers," *Hesperia carthami* was the most common, with *Hesperia malvae*, *H. serratulae*, and *Nisoniades tages* occurring occasionally. Two worn specimens of *Erynnis alceae* were taken, and a few *Loweia dorilis* were noted.

In the evening during a stroll through the fields near Aigle, in the direction of St. Triphon, a few species were noticed at rest. *Cupido osiris* (*sebrus*) and *Cyaniris semiargus* were sitting on the grass stems, and *Loweia dorilis*, *Melitaea cinxia*, and one *Cyclopides palaemon* were picked off the flowers of sorrel. The next day, May 19th, was an ideal day for collecting, for the sun shone brilliantly in a cloudless sky, with a slight, and very pleasant, breeze to temper the heat. Taking the train to St. Triphon, I collected among the meadows bordering the railway, until I came to the Gryonne, afterwards working up and down the banks of this stream. The meadows were swarming with insect life. *Colias hyale* was abundant and in very fine condition, but of its congener, *C. edusa*, only solitary specimens were noticed. At Branson on the previous day one or two *Melitaea parthenie* had been noticed, but here they were coming out in increasing numbers, flitting to and fro in the company of *M. cinxia*; while near the Gryonne, a single *M. athalia* was captured. *Erebia medusa* was fairly common, flying about the meadows and railway banks. *Cyaniris semiargus* was as abundant in the meadows as it was on the banks of the canal. A few *Pieris rapae* and *P. napi* were observed, and occasional *Euchloë cardamines* were frequenting the banks of the railway and the Gryonne. Along the sides of the railway, a single *Cyclopides palaemon*, in prime condition, was netted, and another darted off with the usual "skipper" flight. *Hesperia malvae* and *Nisoniades tages* were also flying fairly commonly, and specimens of *Augiades sylvanus*, evidently recently emerged, struck me as being unusually early. A few *Nemeobius lucina* were noticed on the privet hedges by the railway, and their fondness for settling on this shrub was very noticeable, for they generally re-alighted on the privet after being disturbed, and they could not have been attracted by the blossom as it had not yet made its appearance. The railway-banks were the resort of many "blues," chiefly *Cupido minimus* and *Cyaniris semiargus*, but it was not until I reached the Gryonne that I found the headquarters of this family. The raised banks of the rushing stream were covered with a profusion of wild flowers, and here "blues" were simply swarming, the commonest species being *Plebeius argyrognomon* and *Cyaniris semiargus*, with a fair sprinkling of *Cupido osiris* (*sebrus*) and *C. minimus*, and occasional worn *Glaucopsyche cyllarus*. *Leptosia sinapis*, in fair condition, was plentiful. *Pararge megaera* was taken as it flitted about the stone embankment. One *Powellia sao* was netted. A specimen of *Euranessa antiopa* dashed along out of reach, and occasional *Iphiclides podalirius* flew up and down the stream. One or two *Anthocharis simplonia* were seen, but this is a difficult insect to capture on account of its very rapid flight, and I could not manage to get more than one specimen. The broad-bordered bee hawk moth, *Hemaris fuciformis*, was not uncommon at the flowers of bugle.

The following day was fine and sunny, and, after spending the morning working off arrears in setting, I walked out to the St. Triphon marshes. In addition to the species noted on May 16th, I took a



couple of very nice *Cyclopides palaemon*, *Callophrys rubi*, and *Nemeobius lucina*. A fair number of *Erebia medusa* were on the wing, but apparently this species very soon shows signs of wear, for few of those captured on this date were so fresh as those taken on May 16th. A single *Aporia crataegi* was noticed, and I succeeded at last in capturing a specimen of *Iphiclidea podalirius*, which, with *Papilio machaon*, was attracted by a puddle in the roadway. Tattered specimens of *Vanessa io* were fairly common, flying along the roadway, or sporting with an occasional passing *Euvanessa antiopa*.

The next day, May 21st, was a perfectly ideal day from an entomological point of view, for the sky was quite cloudless, with the sun blazing fiercely. I took the train to St. Triphon, with the intention of working for *Melitaea parthenio* at Charpigny. Specimens of *Iphiclidea podalirius* and *Issoria lathonia* were taken at the foot of Charpigny, but both species were woefully ragged. The pathway to the top of the hill led through a wood of mixed growth, where *Pararge megaera*, *Euchloë cardamines*, *Nemeobius lucina*, and *Leptosia sinapis*, were all more or less common. In the grassy glades of the wood, and in the adjoining fields on the summit of the hill, *Melitaea parthenio* was flying commonly, with *M. cinxia* in fewer numbers, both in prime condition. *Colias hyale* was in some numbers, and the specimens of *Pieris brassicae* and *P. rapae* that were netted were in good condition, and quite typical. The "blues" included *Cyaniris semiargus*, *Cupido osiris* (*sebrus*), and *Polyommatus icarus*, whilst very worn *Callophrys rubi* were occasionally noted. A ♀ *Hyles euphorbiae* was taken fluttering in the herbage, and occasionally a specimen of *Aglia tau* dashed along the outskirts of the wood.

At this juncture a peasant who came up complained of the damage I was doing to the grass, and informed me that the ground was private. Fortunately, the owner of Charpigny, Mr. Fison, is an enthusiastic lepidopterist, and a most courteous gentleman withal, and as I was lucky enough to find him indoors, he not only gave me permission to collect in the grounds, but most kindly showed me the favourite corners for the different species. Subsequently I was much indebted to Mr. Fison for supplying me with further information relating to collecting in other Rhone Valley localities.

(To be continued).

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## OBITUARY.

### William Ambridge Luff, F.E.S.

A large circle of entomologists will hear with great regret that William Ambridge Luff is gone from us. He died at his residence, La Chaumière, Guernsey, on Thursday, May 19th, aged 59. From early childhood he was ardently attached to the study of nature, saving his pence for the purchase of collecting apparatus. His life was one of singular energy, though outwardly remarkable for quiet manner and unruffled calm. Very early, by the death of his father, he was called upon to take up the responsibility of an important cabinet maker's and upholsterer's business, and the practical fatherhood of his younger brothers and sisters. This is not the place to speak of his personal character, but it is not too much to say that he was held in universal respect and esteem by all who were privileged to know him. He

leaves a widow, two sons and a daughter, to mourn his loss. As a citizen he took an interest in public affairs, and has held various important offices in what in Guernsey is equivalent to municipal government. He was a valued member of the council of that excellent institution the Guille-Alles Library, and a chief influence in the founding of the Guernsey Society of Natural Science and Local Research, of which, from its initiation to the day of his death, he was Hon. Treasurer. He was elected President at the Fifteenth Annual Meeting of the Society, a post which is tenable for two years, and delivered his address on retiring on December 19th, 1900. He had amassed vast collections of local insects in nearly every department of entomology, and it is to be hoped that these may be retained intact and held in competent keeping for the benefit and education of Guernsey. He had also formed a valuable library of entomological books and other works and engravings connected with his native place, and had lately added to his house two capacious rooms for the reception of these treasures. It is a touching circumstance that, on the Saturday, feeling suddenly a great increase of his illness, and walking with extreme difficulty, he made his way to the door of his "Museum," and clinging to the door which he had opened, took a long silent look around, before being led up to his bed from which he never rose again.

W. A. Luff has made his own name and place in the entomological history of the Channel Isles—and can never have a successor. He has done a pioneer work which will doubtless receive additions from other hands, and may occasionally require correction, but it will never need to be done again. He has systematised our knowledge of the entomological fauna of Guernsey in particular, and of the Channel Isles in general. Every worker in the same field will be indebted to Luff. All his life he had been collecting material, and his lists of the various families of insects, indigenous to the Channel Isles, have extended over a period of nearly thirty years. We need not point out the value of such diligent and systematic work to the cause of science. His knowledge, though chiefly confined to the insects of his own home, was thorough, his industry unflinching, and his gifts of observation unusually acute and accurate. We think it doubtful if any corresponding portion of Great Britain has been so exhaustively searched, and the results as minutely recorded by any one entomologist, as the Island of Guernsey and its dependencies, by the subject of our notice. He, more frequently before the foundation of the Guernsey Society of Natural Science, 1882, contributed notes to the various entomological periodicals, but his chief and lasting work is to be found in the *Transactions* of the local society. In these pages, from the first publication in 1882 to within a few weeks of his death, appear, year by year, carefully compiled lists of insects in all departments, recorded for Guernsey. He began with the Macro-lepidoptera, using as a basis Ansted's not very reliable earlier attempt to record the fauna of Guernsey. He ended on December 15th, 1909. In cases admitting of doubt, he was particular to submit his insects to the critical inspection of specialists in England. This brief list of his principal contributions to the *Transactions of the Natural Science Society*, will best show the wide field of his investigations. 1882, "The Butterflies of Guernsey and Sark," "A List of the Nocturnal Macros of Guernsey, Alderney, Sark, and Herm;" 1890 and 1892, "The Hemiptera-Heteroptera of



Guernsey;" 1891, "A List of the Neuroptera of Guernsey;" 1895, "Diptera;" 1896, "The Orthoptera;" 1897-1900, "Three papers and lists of the Insects of Alderney;" 1902, "The Cicadæ;" 1903, "The Coleoptera;" 1904, "The Aculeate Hymenoptera;" "The Coccidæ of Guernsey," "The Insects of Herm and Jethou;" 1906, "The insects of Sark;" 1908, "The Insects of Jersey."—F.E.L.

## COLEOPTERA.

COUNTY RECORDS OF COLEOPTERA.—Mr. Donisthorpe makes a very sound suggestion in the last number of the *Record* as to the starring of new county records, but some definite basis is needed to make it practicable. Either you must take some definite starting point to work on, such as the lists given in the published volumes of the *Victoria County Histories*, or recorders must be recognised for the various counties, to whom reference can be made regarding additions to the county list. Reference to Fowler's *Coleoptera* is precluded in cases where no list of localities is appended, and one cannot assume the occurrence in any particular county of every species of more or less general distribution. I have been much struck in working up the beetles of Herefordshire (which is almost virgin ground to the coleopterist) by the great rarity or apparent absence of many species which I had always regarded as of general occurrence, and every student of geographical distribution must have had similar experience. I would therefore emphasise the importance of complete county lists, and not merely records of rarities. Mr. Donisthorpe's note accuses me groundlessly of making "vain repetitions." The notes to which he refers are, as the title implies, entirely concerned with Herefordshire, whereas "the Malvern Hills," of Fowler's *Coleoptera*, is a Worcestershire locality. It is true that the Herefordshire Beacon is in the county to which its name refers it, but "the Malvern Hills," as usually so-called, are entirely in Worcestershire, and, moreover, I had taken the precaution to ascertain from Canon Fowler that this was the county to which his records referred.—J. R. LE B. TOMLIN, M.A., F.E.S., Reading. May 18th, 1910.

MYRMECOPHILOUS COLEOPTERA IN HEREFORDSHIRE.—I paid a short visit to Symond's Yat in April last, in order to work the *F. rufa* nests on the Great Doward Hill. Beetles were remarkably abundant, and, with the exception of the *Ptilium*, all the following were more or less common:—*Oxyptoda formiceticola*, Märk., *O. haemorrhoea*, Sahl., *Thiasophila angulata*, Gr., *Dinarda märkeli*, Kies., *Myrmedonia humeralis*, Gr., *Notothecta flavipes*, Gr., *Quedius brevis*, Er., *Xantholinus atratus*, Gr., *Leptacinus formicetorum*, Märk., *Ptilium myrmecophilum*, All., *Dendrophilus pygmaeus*, L., *Monotoma conicicollis*, Aub., *M. formicetorum*, Th. All these are new county records.—Id.

## VARIATION.

NOTE ON AMBLYPTILIA COSMODACTYLA, HB. (ACANTHODACTYLA, Tr.), AB. NIVEA, BNKS.—In the course of my notice of this beautiful aberration, in *Ent. Rec.*, xviii., p. 39 (1906), I stated that the two specimens, from which my description was made, were taken by Mr. W. Salvage, "probably in Sutherlandshire, though this is uncertain." At the

time of writing this, my firm belief was that, when I first saw the individuals some years previously, Mr. W. H. B. Fletcher told me that they had been taken in Sutherlandshire; in the interval, however, the data had slipped his memory, and no note, throwing any further light on their history, could be found. Since then I have succeeded in discovering Mr. W. Salvage's address, and he has kindly searched his diaries in the hope of finding the desired details, but without success. He tells me, nevertheless, that the moths in question were undoubtedly taken at large, and that he feels almost certain that they were secured at Invershin, on the banks of the river Kyle, in Sutherlandshire. Mr. Salvage thinks that the year of capture was probably 1886, but it may have been 1892 or 1894.—EUSTACE R. BANKES, M.A., Norden, Corfe Castle. May 28th, 1910.

## NOTES ON COLLECTING, Etc.

STRANGE POSITION OF PUPARIUM OF *HADENA OLERACEA*.—The following instance of an unusual pupal habitation seems to be so remarkable as to be worth recording. On August 19th last I was collecting pupae of *Nonagria arundinis* (*typhae*) in a reed bed, when I found a Noctuid larva on the point of pupating in the central stem of a reed, head upwards. The larva had spun a little thin silk round itself and was unrecognisable, but obviously not *Nonagriid*. It pupated on the way home. I preserved the pupa carefully, as I had no idea what species it would turn out to be. On June 13th of this year the moth emerged, and proved to be *Hadena oleracea*. The reed was in the middle of a large bed normally under water, which had been temporarily drained off for the purpose of my search. There was no other growth near, so to all appearances the larva had fed on this unusual pabulum. The reed below it contained a large amount of frass, and there was no evidence that it had been tenanted by any other larva.—H. C. HAYWARD, Repton, Burton-on-Trent. June 15th, 1910.

*DIASEMIA RAMBURIALIS* REPORTED FROM LINS.—A REQUEST.—In the account of the sale of the remaining portion of the collection of lepidoptera made by the late Mr. J. A. Clark in the *Entomologist's Record* for April last, I notice that a specimen of *Diasemia ramburialis* labelled "Lins, 1873," was sold in lot 158. As the Entomological Secretary for the Lincolnshire Naturalists' Union, I shall be very much obliged if the purchaser of this insect will communicate with me, and let me have any further particulars if he knows them, should this note come to his notice.—GUY W. MASON, Barton-on-Humber.

LEPIDOPTERA IN SUSSEX.—The hot weather about mid-May brought things on. On May 22nd *Brenthis selene* was out in some numbers at Abbott's Wood and ♂s of *B. euphrosyne* going over; on May 20th *Polyommatus icarus* was out in numbers on the downs but no *Agriades thetis* was seen until May 22nd. I have sugared several times at Abbott's Wood but it proved quite a failure until last night when I got a few insects, including *Aplecta prasina*, *Gonoptera libatrix*, *Grammesia trigrammica*, *Hadena thalassina*, *H. dentina*, *Xylophasia rurea*, *Apamea basilinea*, *Noctua rubi*, *Euplexia lucipara*, *Miana strigilis*, *Erastria fasciana*, *Thyatira batis*, *Cymatophora or*, *Eurymene dolabraria*, *Tephrosia consortaria*, and *Numeria pulveraria*, while a good number of *Melanippe montanata* and *Acidalia remutata* were also attracted. I have



found a few larvæ of *Geometra papilionaria* on the birches, and a fair number of those of *Agriopsis aprilina* in the crevices of oak-trunks.—J. ALDERSON, 14, Dafforne Road, Upper Tooting, S.W. June 2nd, 1910.

PACHETRA LEUCOPHÆA, ETC., IN NORTH KENT.—It appears to me to be worth recording the capture of *Pachetra leucophaea* at Halling yesterday; it was resting on the trunk of a beech-tree at the top of the downs. I saw very few butterflies, the most interesting were *Celastrina argiolus* and *Brenthis euphrosyne*.—J. OVENDEN, Frindsbury Road, Strood. June 9th, 1910.

## SCIENTIFIC NOTES AND OBSERVATIONS.

A SEXUAL HABIT IN SATYRUS HERMIONE.—In August, 1909, in the Austrian Tirol I observed two specimens of *Satyrus hermione*, a ♂ and ♀, fly up together from the ground several times and rest on the ground for a considerable time between the flights. They were then carefully watched. The ♀ was fairly fresh, the ♂ considerably worn, having large pieces out of all four wings, quite half of the forewings being absent. The butterflies seemed to be evidently playing, there appeared to be no attempt whatever at courtship. As the two insects circle round each other and settle on the ground, they come face to face, the wings touching over the back. The ♀ *hermione* then throws her wings quite forward as she stands facing the ♂; the latter also throws his forward, then depresses them slightly and follows this up by bringing them up quickly so as to rub the edges of the costa of those of the ♀ on the underside. The ♂ also uses his antennæ to strike the antennæ of the ♀ and appears to do this several times, but, as soon as he gets too close, the ♀ makes several sharp butts at him, sometimes settling down again, whilst, at other times, this is the signal for both to rise in the air, when they circle round and settle down again. The ♀ stands quite still during the operation, until the ♂ disturbs her sufficiently for her to butt at him. This habit appears to have nothing whatever to do with pairing and is continued for perhaps five to ten minutes before they fly off in different directions. In the particular case described they were unfortunately disturbed before doing so of their own accord.—A. M. COCHRANE, Lewisham. March, 1910.

## CURRENT NOTES.

It is with great pleasure that we are able to congratulate Mr. Selwyn Image, M.A., F.E.S., poet and artist, and one of the Members of the Council of the Entomological Society of London, on his appointment to the Slade Professorship of Fine Art in the University of Oxford, of which Chair Ruskin was the first occupant. The charming poems that he has so often permitted us to print at Christmastide or in the New Year are known to all our readers, whilst his work for the furtherance of Art is recognised by all educated men throughout the country. His last achievement entomologically and artistically has been the designing of a seal for the Entomological Society of London.

Dr. D. Sharp separates *Melanophthalma* from *Corticarina*, merging the latter however in *Corticaria*. He places the British species

*transversalis* and *distinguenda* in *Melanophthalma*, and the three remaining species of the Beare and Donisthorpe Catalogue—*fuscula*, *truncatella*, *similata*—in *Corticaria*. He then describes two new species: (1) *C. lambiana* found in the New Forest in August, 1908, on oak, and (2) *C. fowleriana* named on a single specimen, apparently a ♀, found at Braemar in July, 1871, and alluded to in Fowler's *Col. Brit. Isles*, iii., p. 294, as a variety of *C. similata*.

Mr. Newbery adds *Lesteva fontinalis*, Kies., to the list of British species, on specimens taken by Mr. de la Garde on February 19th, 1908, and March 2nd, 1910, amongst wet moss on the face of the cliffs at Shaldon, Devon, in company with *L. pubescens* and *L. punctata*; Champion adds that all the southern specimens standing in his collection as *L. pubescens*, and taken from moss along the margin of a small stream at Sandown, Isle of Wight, are referable to this species.

Dr. Sharp diagnoses as new species—*Gabrius stipes* from Plymouth (Keys), Mickleham (Champion), Cambridge (Sharp); *Gabrius pennatus*, England and Scotland, rather common, without more exact indication; *Gabrius velox*, on the banks of the river at Lymington; *Gabrius keysianus*, Slapton Ley (Champion and Keys); *Gabrius appendiculatus*, England and Scotland; *Gabrius bishopi*, Beattock and Thornhill, very rare (Bishop and Sharp).

Mr. Newbery records the capture of a single example of the well-known southern *Trechus subnotatus*, Dej., by Mr. P. de la Garde, at Shaldon, near Teigamouth, February 28th, 1910.

Mr. J. Edwards distinguishes the three species of *Smicronyx*, Schön.—*S. coecus*, Reich. (= *Pissodes pygmaeus*, Curt.), Weymouth, etc.; *S. jungermanniae*, Reich., Bournemouth, Woking, Esher, Shirley, Mickleham, Caterham, Guildford, etc. (Champion); *S. reichi*, Gyll., Folkestone (E. A. Waterhouse), Caterham (Champion).

Mr. E. A. Butler adds *Poeciloscytus palustris*, Reut., to the list of British Hemiptera, from specimens captured in marshy hollows on the Pendine Burrows, Carmarthenshire, and Rookley Wilderness, Isle of Wight, in August and September.

Dr. Wood continues (*E.M.M.*) his account of the British *Phoridae*, and describes a number of new species—*Phora pallens*, *P. spinata*, *P. serrata*, *P. verralli*, *P. latifrons*, *P. lata*, *P. angelicae*, *P. longipalpis*, *P. gregaria*, *P. rufifrons*, *P. pectoralis*, *P. involuta* and *P. simplex*.

The Rev. F. B. Morice records (*E.M.M.*) the capture by Mr. Donisthorpe, of *Neurotoma mandibularis*, Zadd., a sawfly new to Britain, at Brockenhurst, on May 28th, 1910.

Two more beautiful plates of Mr. Culot's *Noctuelles et Géomètres d'Europe* with accompanying letterpress have just come to hand as pt. 4 of this excellent work. We are rather at a loss to know whence Mr. Culot has derived the name *N. dahlia* ab. *bicolor*, Obth. The figure is an excellent one of our British *N. dahlia* ab. *rufa*, Tutt, *Brit. Noctuae* etc., ii., p. 114. We did not know that we had been forestalled in the naming of this common British ♀ form. The plates are really splendid, and any of our collectors of Noctuids who have not yet got a copy should write to Mr. Culot, Villa-les-Iris, Grand Pré, Genève, for details.

Our further congratulations to the Société Lépidoptérologique de Genève on the publication of pt. 1 of the second volume of its *Bulletin*. So many of our British lepidopterists have to be considered Switzers



entomologically, that the publications of this active little society is just as interesting to us as to the members themselves. Indeed, for that increasing army of British lepidopterists who do most of their collecting in the Alps of Central Europe, the *Bulletin* of the Geneva lepidopterists is as necessary as our own British magazines, and we would invite those who have not yet joined the Society, to put themselves into communication with that prince of Swiss entomologists, the editor of the *Bulletin*, Prof. C. Blachier, 11, Tranchée de Rive, Geneva, or to the Honorary Life-President, to whom the foundation of the Society is due, and to whom the President in his address pays a high compliment, Mr. P. A. H. Muschamp, F.E.S., Staefa, Zürich, either of whom will be pleased to give every information as to membership.

Of the contents of this part we cannot speak too highly. The energetic President, our valued correspondent and helper, Dr. J. L. Reverdin, is responsible for three papers—" *Lycaena corydon* var. *constanti*," "Note on the ♂ genital armature of some Palaearctic Hesperines," and "Aberrations of Lepidoptera." Professor Blachier is responsible for one paper, "New Varieties and Aberrations of Palaearctic Lepidoptera." Mr. J. Jullien writes on "*Euterpia loudeti*, Rbr.," and Mr. C. Lacreuze, "Observations on the Hesperines of Switzerland." The papers are illustrated by seven very fine and beautiful coloured and half-tone plates.

The paper of greatest interest to collectors of European Rhopalocera is that of Dr. Reverdin on "The ♂ genital armature of the Hesperines." The difficulty of separating the Hesperines of the *alveus* group is well-known to every lepidopterist. Dr. Reverdin is able, by the ♂ genital armature, to distinguish specifically *Hesperia alveus*, Hb., *H. carlinae*, Rbr., *H. onopordi*, Rbr., *H. fritillum*, Rbr., and *H. serratulæ*, all of which, except the last, stand in almost all our collections as forms of *H. alveus*. The *speyeri* of Staudinger is considered an ab. of *H. alveus* and *cirsii*, Rbr., and *iberica*, Gr.-Gr., as abs. of *H. carlinae*. Mr. Lacreuze's well-illustrated paper on "The Hesperines of Switzerland" may be looked upon as supplementary to Dr. Reverdin's, and with these two papers some considerable headway may be made in determining the species found in the Alps of Central Europe.

With pt. 1 of vol. ii of the *Bulletin*, the first part of the "Catalogue of the Lepidoptera of the Geneva district" (with map) is also published. This is an excellent list, well edited, and gives a first class idea of the extent of the fauna of this prolific district, including as it does part of Haute-Savoie and part of the Jura. The only objection we have to the list is the fact that, although the editors are, perhaps, better able than any other European lepidopterists to judge as to the validity of, and, therefore, give effect to their knowledge of, the natural genera into which the butterflies fall, yet, they have followed the often hopeless and absurd divisions, mis-called genera, of the Staudingerian *Catalog* of 1901, many of which have been the butt of all advanced systematists ever since its issue.

Do the editors really believe, in spite of all the detailed information to the contrary, that *telicanus* belongs to the same genus *Lampides* as that in which *boeticus* is placed (see *A Nat. Hist. Brit. Butterflies*, ii., p. 331), and where Bethune-Baker is quoted as saying that "*Boeticus* stands quite alone so far as Staudinger's genus is concerned, and is the

only representative of the *Lampididi*; the remainder are quite outside the tribe, and of these, *telicanus*, Lang, and *webbianus*, Brullé, belong to the genus *Langia*" [afterwards renamed (*op. cit.*, p. 484) *Raywardia*, *Langia*, Moore, *Proc. Zool. Soc. Lond.*, 1872, p. 567, being pre-occupied]?

Again, are the editors not satisfied that we have made out a case for *Evees* for *argiades* and *alcetas*, for *Cupido* for *minimus*, *Plebeius* for *argus*, *argyrognomon*, etc. (*A Nat. History of the British Butts.*, vol. iii.), and do they really think that these species belong to the same genus *Lycaena* containing *arion* and *arcas*? Then, again, are they satisfied (see *Brit. Butts.*, ii., pp. 378-387, and iii., pp. 248-253) that *Cyaniris* is the right name for *argiolus*?

We are disappointed that the Editors have not been convinced by the accumulation of facts we have brought together on the subject. On the other hand, if they are convinced, but follow a list (proved to be erroneous) merely for convenience, we would ask whether this will make for pulling the younger and eager lepidopterists up-to-date in their work? It is well known that Staudinger's genera were largely obtained haphazard from those who were at work at the time on the various groups, but one expects the genera in a list published by the Geneva entomologists to rest on some surer foundation than Staudinger's *Catalog*. We hope the editors will forgive us this little howl, but we cannot believe that they believe the *Everids* of the world, the *Plebeids* of the world, and the *Polyommatis* of the world should all be put into a hotch-potch miscalled *Lycaena*, a name belonging to the very separate and natural genus comprising *arion*, *arcas*, *euphemus*, etc. Dr. Reverdin will no doubt check our work, by means of the genitalia of the "blues," and persuade his slower comrades that we are right and that there is no advance unless one goes ahead. We expect to take a long time to convince the mere collector that any change is just or right, we know we shall never convince him that it is desirable, but we are prepared to visit Geneva to prove to the elect there that our views are both right and sound on this matter. "Festina lente" may be a good motto, but however slowly we hasten, we must get ahead for all that and putting *io*, *polychloros*, *antiopa* in one genus *Vanessa*, *telicanus* and *boeticus* in one genus *Lampides*, and *argiades*, *argus*, *icarus*, and *arion* in one genus *Lycaena*, is not hastening at all but going backwards. We hope that we shall have got beyond Staudinger's *Catalog* for the *Sphingids*, *Lachneids*, *Psychids*, *Noctuids*, etc., when they come along. Our readers must not forget, however, that, in spite of this wail, it is a list to get, and the best of its kind; we only want it better.

## SOCIETIES.

SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY.—May 12th, 1910.—LOCALITY FOR *MELITEA AURINIA* GONE.—Mr. Tonge exhibited a series of *Melitea aurinia* taken at Verney Junction, about 1890, but apparently the species is now extinct there. ABERRATION OF *ASPHALIA FLAVICORNIS*.—Mr. Ashdown, a specimen of *Asphalia flavicornis* from Mickleham having a large dark blotch in the disc of the forewings. PARNASSIDS.—Mr. Edwards, numerous species of the genus *Parnassius*, including *P. transiens*, *P. smintheus*, *P. gracilis*, *P. imperator*, etc.



ABERRATION OF *PHIGALIA PEDARIA*.—Mr. Coulson, a very pale buff example of *Phigalia pedaria* from Epping Forest. BUTTERFLIES OF ZERMATT.—Mr. H. J. Turner, a number of species of Lepidoptera from Zermatt, and read a paper entitled "A few days with the Butterflies of Zermatt." June 9th, 1910.—ABERRATION OF *EPIONE ADVENARIA*.—Captain Cardew, a short series of *Epione advenaria*, including an unicolorous specimen from Godalming. PARTIAL DOUBLE-BROODEDNESS IN *PIERIS NAPI*.—Dr. Hodgson, the imagines bred from a brood of *Pieris napi* from ova laid in May, 1909. Some emerged in July-August, 1909, but most of the insects did not appear till the spring of 1910. AMPHIDASYS BETULARIA AB. DOUBLEDAYARIA NEAR LONDON.—Mr. Harrison reported the assembling of 21 ♂s of *Amphidasys betularia*, 14 of which were ab. *doubledayaria*, at Woodford.

ENTOMOLOGICAL SOCIETY OF LONDON.—June 1st, 1910.—ADDRESS TO THE KING.—The President proposed that an Address of Condolence and Congratulation should be presented by the Society to His Majesty, King George V., on his accession to the throne. The proposal was seconded by Mr. H. Rowland-Brown, and carried unanimously, all Fellows present standing. POSTPONEMENT OF THE CONVERSAZIONE.—The President announced that the Conversazione, postponed from Friday, May 27th last, by reason of the general mourning for His late Majesty, King Edward VII., would be held during the forthcoming session on some date not earlier than the last week in November. RARE BRITISH BEETLES.—Commander J. J. Walker exhibited examples of *Ceuthorrhynchus pilosellus* and *C. mixtus* taken by him during May last, at Tubney, Berkshire. RARE HYMENOPTERA.—The Rev. F. D. Morice showed a specimen of *Clavelia pompiliiformis*, Luc., ♂; the only fossorial wasp with pectinated antennæ taken by him this spring at Oran, Algeria; also examples of the saw-fly, *Phymatocera aterrima*, Klug, with photographs of the insect in the act of ovipositing on "Solomon Seal," and gave an account of the way in which the saws are employed for the purpose. Instead of cutting vertically, the saws are turned sideways, a characteristic method employed, said Mr. F. Enoch, by many of the Homoptera. Mr. A. Sich mentioned that some years since many larvæ, which appeared identical with those of *P. aterrima* exhibited, occurred on the same plant in his garden at Chiswick. GLOW-WORM PUPA.—Mr. H. Main brought for exhibition an empty larva skin of a ♂ *Lampyrus noctiluca* with a living pupa, which was seen to be intermittently luminous. MELANISM OF *EMATURGA ATOMARIA*.—Mr. L. Newman showed a case containing a long and varied series of *Ematurga atomaria* bred from a melanic ♀ taken in cop. with a dark typical ♂ at Bury, Lancashire. It was noticeable that melanic and semi-melanic forms of the offspring predominated. HYBRID LYCENIDÆ.—Mr. Newman also exhibited a ♂ and ♀ supposed to be hybrid *Agriades thetis* (*bellargus*) × *A. coridon*, taken wild in North Kent, June, 1909, by Sergt.-Major W. Crocker, R.E. He said they resembled examples taken on the same spot about sixteen years ago by the late Mr. E. Sabine. [We have, unfortunately, not been able to see these specimens. They may, of course, be examples of *Agriades* hybr. *polonus*, but if they resemble those captured by Sabine, they cannot be hybrids, as Sabine's specimens were frequently exhibited, and have been fully described under their own varietal names (see *A. Nat. Hist. Brit. Lep.*, x.,

pp. 339-341).—ED.]. OVA OF *SESIA ANDRENIFORMIS*.—Mr. Newman further exhibited ova *in situ* of *Sesia andreniformis*; and Mr. A. E. Tonge a photograph  $\times 26$  of the same. CETONIIDÆ FROM UGANDA.—Mr. O. E. Janson showed a remarkable gynadromorphic example of *Goliathus giganteus* and other *Cetoniidæ* recently collected by Mr. E. Brown in Uganda, British East Africa, including both sexes of the rare *Formasimus russus*. Nearly all the species exhibited were West African forms, proving the great similarity of the central African fauna, extending over a district of two to three thousand miles across that continent. VARIATION IN AMORPHA.—The Rev. G. Wheeler brought for exhibition a case containing many examples, showing a wide range of variation, bred from identical parents of *Amorpha populi*, taken in Lancashire; also a curious pale dwarf example of *Smerinthus ocellata* from the same locality. BEETLES FROM THE CROP OF PHEASANT.—Mr. C. O. Waterhouse exhibited specimens of a beetle of the family *Chrysomelidæ*, *Crosita altaica*, found by a poulterer at Bournemouth in the crop of a pheasant from Russia. He remarked on the brilliancy of the metallic coppery-red and green colours, and said that it had been held by some that bright metallic colours were warning-colours. AGRIADES CORIDON DOUBLE-BROODED.—Dr. T. A. Chapman exhibited specimens of the spring emergence of double-brooded *Agriades coridon*, taken in April and May last at various places in the St. Tropez district of the Riviera, *viz.*, le Canadel, Pardigon, and several different points near Ste. Maxime, at various dates from April 23rd. to May 11th. He added that the original locality where the species was abundant several years ago near Ste. Maxime, afforded this year only a specimen or two, the *Hippocrepis*, that abounded there having nearly died out, largely smothered by growth of *Cistus montpeliensis*. In each place where the species appeared *Hippocrepis* was present over areas of only a few dozen square yards, so that one wondered how the butterfly could maintain itself. No *Hippocrepis* was seen except where the *A. coridon* was found. The butterfly must be able to wander (often for some miles) from one such locality to another, or it could hardly maintain its existence as it does. The specimens shown displayed a considerable variation, but all appeared to be of one race. LIVING LARVÆ AND IMAGO FROM THE SOUTH OF FRANCE.—Dr. Chapman also showed (a) larvæ of *Thestor ballus* in last instar, feeding on flowers of *Ulex europæus*; (b) Larva of *Agriades coridon* var. *constanti*, from eggs laid at Ste. Maxime at the beginning of May, and now in third instar; and (d) a living imago of *Callophrys avis*, Chpmn., a somewhat belated specimen, that emerged June 1st, 1910; the delay no doubt due to an unsuccessful attempt at forcing in February. RARE INSECTS FROM PORTUGAL.—Dr. K. Jordan exhibited a living specimen (♂) of a species of *Truxalis* obtained by him at Portimão South Portugal, and also showed some living larvæ and the cocoon of a moth, *Diplura loti*. The larvæ were found on *Cistus* in the Serra de Monchique, Algarve, South Portugal, on May 13th, and were being fed upon *Helianthemum*. They apparently resemble the caterpillar of *Lachneis lanestris* so closely that a generic separation appears to be hardly justified. A LYCÆNID ATTENDANT ON AT HOMOPTERON.—Mr. Hamilton H. C. J. Druce read some notes received from Mr. J. C. Moulton, of the Sarawak Museum, on the association of a Homopteron with a Lycænid butterfly observed in Borneo.



## Lepidoptera in Sussex.

By JOHN ALDERSON.

To the July number of the *Entomologist's Record*, I contributed a brief note relating to collecting in the neighbourhood of Eastbourne. In the following notes I have endeavoured to give a cursory review of my collecting during the four weeks I spent in that locality. I was at Eastbourne from May 17th to June 18th, and during that time the collecting was not lacking in interest, for, on the whole, the weather was very favourable. The days were usually warm and bright, and, generally speaking, the nights were close and oppressive, with temperatures that were unusually high for early summer. Consequently, "sugar" ought to have paid well, for the conditions were often ideal; but, at Abbot's Wood, where I "sugared" fairly regularly, the "sugaring" ground is much enclosed by high trees with thick undergrowth, and experience shows that, in this particular locality, a fairly strong wind is necessary to carry the scent of the "sugar" in order to ensure success. Though no very important captures were made at "sugar," the results were fairly interesting. By far the commonest visitor was *Grammesia trigrammica*, and I was able to pick out a nicely varied series, including var. *bilinea*, which was not uncommon. The most interesting insect at "sugar" was *Aplecta prasina*, which was fairly common throughout the whole period, the specimens being generally in very fine condition, and the green ground colour very bright. *Cymatophora* or was an occasional visitor, but, as usual, was very skittish and very restless when boxed. *Thyatira batis* made its appearance on June 1st, but only occasional specimens were subsequently seen. A few specimens of *Lithosia sororecula* were attracted, and *Eurymene dolabraria* was a fairly frequent visitor. *Moma orion* was just making an appearance at the end of my stay, and only a few specimens were captured. *Noctua brunnea* became very common from June 6th, and *N. festiva* appeared on the 9th, becoming quite as common, and nicely varied. *Miana strigilis* was very common, ranging from the type to ab. *aethiops*. Other species taken or noted at "sugar" were—*Noctua rubi*, *N. plecta*, *Triaena psi*, *Craniophora ligustri*, *Apamea basilinea*, *Rusina tenebrosa*, *Agrotis segetum*, *A. exclamantis*, *Leucania comma*, *Mamestra brassicae*, *Miana fasciuncula*, *Hadena pisi*, *H. dentina*, *H. thalassina*, *H. oleracea*, *H. trifolii*, *Xylophasia rurea* and ab. *combusta*, *X. hepatica*, *Euplexia lucipara*, *Phlogophora meticulosa*, *Aplecta nebulosa*, *Gonoptera libatrix*, and *Erastria fasciana*; amongst the Geometers at "sugar" *Melanippe montanata*, *Acidalia remutaria*, and *Iodis lactearia* were very common; other species less frequently met with being *Boarmia repandata*, *B. consortaria*, *Tephrosia luridata*, *Cidaria truncata*, and *C. corylata*. Reference has been made to *Lithosia sororecula* visiting the "sugar," but it was met with much more commonly earlier in the evening, when it could be seen flying high round the oak trees. This species was getting worn by June 3rd. The evening of June 12th was spent on the downs working for *Agrotis cinerea* by means of light. Seventeen specimens of *A. cinerea* were taken, this being the only species attracted, except for occasional specimens of *Hadena dentina* and *Agrotis corticea*. A solitary larva of *Hipparchia semele* was picked off a stem of grass.

SEPTEMBER 15TH, 1910.

Day work amongst the butterflies was confined chiefly to Abbot's Wood. A fair number of species were on the wing at the beginning of my visit, including *Nisoniades tages*, *Hesperia malvae*, *Callophrys rubi*, *Celastrina argiolus*, *Brenthis euphrosyne* and the three common Pierids. I worked *H. malvae* closely for specimens of ab. *taras*, but I took only one on May 24th, on which date I also took a specimen closely approaching this aberration. *Brenthis euphrosyne* was very common and one nice ♀ aberration, with the forewings heavily suffused with black, was taken on May 24th. By this date *B. euphrosyne* had given place to *B. selene*, which was now extremely common. I worked this species very closely for aberrations, but failed to obtain anything that was much removed from the type. I found that the best method of working this species was after it had taken up its resting position. During the day *B. selene* ranged over the whole of the wood, but in its resting-habits it was extremely gregarious, and numbers could then be found in a very restricted area. Here and there amongst the dense growth of bracken were little open patches, covered chiefly with coarse grasses, juncus and sorrel, and it was in such places that *B. selene* was found at rest. It seemed to be especially fond of resting on the flowering heads of sorrel, and, when the insect has adopted its resting attitude, only the underside of the hindwings and the tips of the forewings are visible, and in this position it harmonises exceedingly well with the flowering heads of the sorrel. It rests always with the head downwards. Other favourite perches are the flowering heads of grasses, juncus and thistle; occasionally it may be found on a bracken frond, and frequently on the dead heads of knapweed. Indeed, I have found as many as five specimens clustered on one small head of knapweed. Considering the brilliant appearance of *B. selene* when in flight, skimming the bracken in the bright sunshine, the butterfly is wonderfully inconspicuous when it has taken up its resting attitude. Towards dusk the insect is not easily disturbed, and I found it then did not occupy much time to go through a good number of specimens, picking up each insect between the finger and thumb, and thus affording an easy method of carefully examining each individual. Other butterflies seen at Abbot's Wood were *Euchloë cardamines*, *Gonepteryx rhamni*, *Polyommatus icarus*, *Aricia astrarche*, *Coenonympha pamphilus*, and *Agriades sylvanus*, both sexes of the last named appearing on June 8th. *Rumicia phlaeas* was noted on the railway banks near Polegate.

On the downs near Beachy Head, *Polyommatus icarus* was common. The ♀s were generally more or less suffused with blue, though none was strikingly so, whilst ab. *icarinus* was fairly common. *Agriades thetis*, first seen on May 27th (wrongly given as May 22nd in the July number of the *Entomologist's Record*), was well out on June 3rd, though it was not nearly so plentiful as I had anticipated it would be. A single ♀ *Pararge megera* was taken on June 4th in the marshes near Hampden Park.

Beating for Geometers at Abbot's Wood produced a good number of common species. Amongst the bracken *Panagra petrarum* was exceedingly common, rising in numbers at every step one took; whilst *Melanippe montanata* was almost equally abundant amongst the shrubs and undergrowth. Although not a single specimen of *Tanagra atrata* was observed when I was at Abbot's Wood, on June 3rd, it was



extremely common there amongst the bracken on June 5th, and a day or two later had become even more abundant than *Panagra petrarra* had been. *Euclidia mi* and *E. glyphica* were quite common in the meadows bordering the wood. *Arctia villica* was fairly frequently met with from June 5th, the ♂s flying in the sunshine, and the ♀s being seen resting on the undergrowth. On June 5th *Melanippe hastata* was first seen, two specimens being captured flying in the sunshine about midday, and others were seen on the wing on June 8th. Amongst the species beaten out were *Lithosia sororcula*, *Venilia macularia*, *Iodis lactearia*, *Asthena candida*, *Cabera pusaria*, *Bapta temerata*, *B. bimaculata*, *Numeria pulchraria*, *Lomaspilis marginata*, *Laurentia viridaria*, *Melanippe sociata*, *Coremia unidentaria*, *C. ferrugata*, *Camptogramma bilineata*, *Cidaria corylata*, *C. truncata*, *Pechypogon barbatus*, *Botys hyalinialis*, and *Eunychia octomaculata*. *Boarmia consortaria* and *Tephrosia luridata* were picked off oak-trunks, and, on a lateral branch of oak, a single freshly-emerged ♀ *Drymonia trimacula* (*dodonea*) was found at rest. Along the railway banks between Polegate and Hampden Park, *Heliaca tenebrata* was fairly common on May 21st, and a ♀ *Spilosoma mendica* taken here on the same date, had by the 27th laid about 150 ova, the larvæ from which fed up quickly and well, producing a nice lot of pupæ. On the tops of the freshly-trimmed hawthorn hedges bordering the railway, the larvæ of *Lasiocampa quercus* were sunning themselves in some numbers, and those of *Cosmotriche potatoria* were frequently noticed on the grass and herbage at the foot of the same hedges. Here, also, were found on blackthorn, three larvæ of *Eutricha quercifolia*. On June 5th, the oak-trees at Abbot's Wood were beaten for larvæ of *Bithys quercus*, which were found to be fairly common, and quite fullfed. A few larvæ of *Poecilocampa populi* and *Hylophila bicolorana* were also beaten out amongst a host of commoner species. No systematic work was done in connection with larva-hunting or beating, but, in addition to the species already mentioned, other species found in the larval state at Abbot's Wood were *Lithosia lurideola*, on oak, *Pygaera pigra*, in spun leaves of aspen, *Geometra papilionaria*, on birch, *Dyschorista upsilon*, under moss and loose bark on willow, and *Agriopsis aprilina*, in the crevices of oak-trunks.

No attempt was made to work the Micros, the only species taken or noted being *Tortrix podana*, *T. ministrana*, *Roxana arcuana*, *Batodes angustiorana*, *Symaethis oxyacanthella* (*fabriciana*), *Lampronia praelatella*, *Adela fibulella* and *A. degeerella*.

### Notes on the larva of *Agriades coridon*.

By R. M. PRIDEAUX, F.E.S.

In the hopes of finding some alternative natural food-plant to *Hippocrepis comosa* for this species, I visited the chalk-hills near Oxted, Surrey, on June 14th last. Having previously seen the butterfly common on flowery slopes here, where the above herb was scarce or absent, there seemed a possibility of some other leguminous plant being utilized, especially bearing in mind the repeated occurrence of *Agriades coridon* in situations where, chalk or limestone being absent, it is hardly conceivable that a plant so restricted to the latter as is *H. comosa*, could be found growing. Quite near by, however, *H.*

*comosa* was found locally in some abundance, and a search at the roots of the plants soon revealed the larvæ in question, in various stages. They were invariably found huddled amongst the very bases of the long, stringy stems of the plant, and it was no easy matter to disentangle these without injury to the larvæ.

In the majority of cases, yellow ants were found, if not in attendance on, in close proximity to, the larvæ so obtained, and, in one instance, where eight were found at the roots of one plant (so closely associated as to suggest a gregarious habit), an ant's nest had been formed below, and the fine powdery earth thrown up had completely enveloped the *A. coridon* larvæ, in no way to their discomfiture, apparently. Though the earth adhered so closely to their bodies as completely to conceal the green and yellow markings, so that they were barely recognisable.

These larvæ retained their earthy powdering until the next skin-change, or pupation. Having established them in a cage, with their native food-plant, experiments were made with other plants of the order, with a view to substitution, larvæ being confined for 24 hours with the leaves (and where possible, the flowers) of the following plants—*Lotus corniculatus*, *Ononis arvensis*, *Anthyllis vulneraria*, *Onobrychis sativa*, *Trifolium repens*, *T. pratense* and *T. minus*. With each of these in succession the larvæ showed the utmost dissatisfaction, slowly wandering over them, and round their cage, and returning greedily to the *Hippocrepis*, when their period of probation was over.

A minute nibble was essayed from one of the *Lotus* flowers, and another from a young leaf of *Ononis*, after which these plants were rejected with disgust. Whatever other plants *L. coridon* may possibly select in some localities for egg-laying, it seems pretty evident from the above, that larvæ accustomed to *Hippocrepis* from the outset are unable to change their diet subsequently to any of the substitute food-plants above selected, even *Lotus* proving a "starvation-alternative," as the writer previously found to be the case when rearing *Agriades thetis* (*adonis*) from the egg.

No instance was found of the *Hippocrepis* blossoms, but only the leaves, being devoured. Pupation is definitely subterranean in captivity, a loose cocoon being formed about half-an-inch below the surface of the earth.

This possibly accounts for the inability, some weeks later, to find pupæ in nature in the locality where the larvæ were previously taken, though they were hunted for at the roots of the foodplant for some time, but without success.

The soil not being very dry on this occasion any that might adhere to a dislodged pupa amongst the chalky rubble overhauled would pretty surely render the pupa—never very conspicuous—indistinguishable from the surrounding earth.

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### Cross-Pairing of *Papilio machaon* and *P. polyxenes*.

By CECIL FLOERSHEIM, B.A., F.E.S.

On June 29th, 1908, I was fortunate enough to obtain a cross-pairing of *Papilio machaon* and *P. polyxenes* (*asterias*) in my butterfly-house. *Papilio polyxenes* is an inhabitant of the central and southern portions of North America, and belongs to the same group of



umbellifer-feeding Papilios as *P. machaon*, from which, however, it differs considerably in the imago as far as coloration is concerned, the body in both sexes being black and only spotted with yellow, whilst the male had large portions of what is yellow in the wing-expanse of *P. machaon* taken up with black, and the female both in its larger size and colouring closely resembles that of *Euphœades troilus*, and that of the black variety of *Jasoniades glaucus*; all these being, presumably, mimics of *Laertias philenor*, the only pharmacophagous and highly-protected Papilionid inhabiting the greater part of the region of which they are denizens. The day was a gloriously fine one, and the pairing, which took place about mid-day, lasted about four hours. The *P. machaon*, which was an English bred male, was a worn specimen, and had lost almost the whole of the right, and part of the left, antenna. The *P. polyxenes* was a freshly-emerged female and normal in all respects save in that of size, it being rather smaller than is usually the case with that species. When the pairing was at an end, I segregated the *P. polyxenes* ♀, and was successful in obtaining a fair quantity of ova from her, laid on a growing plant of fennel on June 30th and the two following days. The ova both in shape and colour were indistinguishable through a magnifying glass from those of *P. machaon* and *P. polyxenes* with which I compared them. They began hatching on July 8th, and all the larvæ had emerged by the 11th. As I wished if possible to obtain a second-brood of my hybrids in 1908, in order to avoid the emergence of the butterflies in the autumn, I forced the larvæ in a vinery at a temperature which was seldom if ever under 85° in the daytime and relatively hot at night; for, had I allowed them to remain out-of-doors, the imagines no doubt would have emerged at too late a period of the year for me to have been able to feed up the resultant larvæ. *P. polyxenes*, I had found before to attempt invariably a second-brood in England, whilst I knew that the hybridization was likely to prove an additional factor in accelerating development. In their early stadia I found the larvæ in all respects like those of their parents, which, in turn, I am unable to distinguish between at this period of their lives, both being subject to much variation. In the penultimate instar the hybrids seemed to me somewhat less yellow than those of *P. polyxenes*, and generally resembling *P. machaon*. The full-grown larva, however, was exactly like neither. It was larger than that of the average *P. machaon*, being identical in size with that of *P. polyxenes*, and had the bluer-green ground colour of the latter, but the chrome-yellow spots of *P. polyxenes* and the red ones of *P. machaon*, were replaced by pale orange ones, which were larger than those of the *P. polyxenes* larvæ I have met with, and almost entirely broke up the black bands as in some specimens of *P. machaon*. The first larvæ spun up for pupation on July 26th.

The resulting pupæ resembled typical *P. polyxenes* pupæ in all respects, and were not in the least like those of *P. machaon*, either in shape or in colour wherever a difference presents itself between the parent strains. They even followed those of *P. polyxenes* in the longer and slenderer stays of the thoracic girdle. The first imago, a male, emerged on the morning of August 12th, the pupæ having been kept in the vinery at the same heat as the larvæ, save that the weather outside had turned colder. It was followed by two others in the course of the week (14th and 17th), both being males. Although I secured

some forty pupæ of my hybrids, only these three produced imagines, all the rest dying, probably through over-forcing. I have compared the butterflies with the *P. polyxenes* in the National Collection, and though they at first sight seemed to have more yellow on their hind-wings than was the case with the *P. polyxenes*, I succeeded in finding some specimens of the latter which resembled exactly my hybrids, which in every respect are unlike *P. machaon*. I kept one of the three butterflies alive for some days in my butterfly-house, and it paired readily with a fine ♀ *P. machaon* (second brood). Alas! the *P. machaon* was drowned the next night in a thunderstorm. The fact of the pairing, however, may be significant, as, both in 1909 and in 1910, I have been unsuccessful in continuing my experiment, and have failed totally in getting either ♂ *polyxenes* × ♀ *machaon*, or ♂ *machaon* × ♀ *polyxenes*. Last summer, however, I succeeded in getting a pairing between ♂ *P. machaon* and ♀ *Jasoniades glaucus*, which was normal as far as duration was concerned. All the ova laid, however, proved infertile.

### Coleoptera at Braemar in June.

By H. ST. J. K. DONISTHORPE, F.E.S., F.Z.S.

On June 8th I left London to spend ten days at Braemar in search of beetles. My colleague, Professor Beare, met me at Aberdeen, as he was able to join me for a few days before he had to be at Oxford. After an early breakfast we continued our journey, the last stage of which consisted of a twenty mile ride in a motor.

Fortunately the weather was fine during the whole of my stay with the exception of one wet day, a remarkable thing in such a bad year. The results of the trip were also very satisfactory and I added a number of rare and interesting insects to my collection.

The chief object of our visit was to try and find *Elaphrus lapponicus*, and after a long hunt on Mount Morrone, we located a spot. This consisted of a large area of *Sphagnum*, sloping down towards the top of a waterfall about 2800 feet above sea-level. Through this water was running, the whole place being wet. Having removed our boots and socks we waded about in the thick wet *Sphagnum* and soon found the beetle. It comes up in the sunshine, runs about in the sun for a short time, then disappears again. Several hours' work produced a nice series each of this beautiful beetle. Its colours range from copper, bronze, crimson, and steel colour to nearly black. Our feet got sunburnt with the exposure to the sun and were very painful next day. I paid another visit to this place before I left and found that the spot was spoilt. I was told by two men who were digging in the *Sphagnum* that it was the town water supply. They cut the water off from the plateau and carried it off in ditches at the sides and quite dried up the *Sphagnum*. I only saw one single *Elaphrus*, which looked very like a fish out of water, as it crawled slowly away. I took a fine specimen of the rare *Amara alpina* near this spot. Other mountain species taken were *Harpalus 4-punctatus*, common, *Harpalus latus* var. *erythrocephalus*, *Cymindis vaporariorum*, *Carabus glabratus*, *Patrobis septentrionis*, and *Miscodera arctica* under stones. *Anchomenus ericeti* was found on thick patches of pink *Sphagnum* at the foot of the mountain, a variable series of this brilliant insect being taken. Like



the *Elaphrus*, it only comes out when the sun shines and is exceedingly rapid in its movements. In moss on the mountains and of the sides of waterfalls occurred *Lesteva sharpi* and *L. pubescens*, *Homalota silvicola*, *H. oblongiuscula* and *H. eremita*, *Ocyusa incrassata*, *Arpedium brachypterum*, *Gymnusa variegata*, etc. The very rare *Bryoporus rufipennis* and *Mycetoporus monticola* were taken by me on Ben-na-buird nearly 4000 feet up.

Melanic forms of the following species were found—*Lesteva longelytrata* (with quite black legs), *Elaphrus lapponicus*, *Anchomenus ericeti* and *A. parumpunctatus*, *Corymbites aeruginosus* (nearly black ♂), *Tachinus subterraneus*, *Pterostichus vitreus*, *Carabus arvensis*, *Amara lunicollis*, and *Phratora vitellinae*.

In the river bed of the Dee we took *Coccinella 5-punctata* and *Cryptohypnus maritimus*, a very agile and difficult species to catch, occurring in numbers on the boulders, a new record, I believe, for the Dee. It flies in the sun, runs as fast as a tiger beetle with its long legs, and "skips" off the large stones into the shingle. In a sand-pit *Tachinus elongatus*, *Byrrhus dorsalis* (very finely marked), *Barynotus schönherri* (abundant), *Eriirhinus aethiops*, and *Phyllotreta flexuosa* occurred. Sweeping for the two latter in a marsh near was successful, a series of each being taken.

*Geodromicus nigrita* was captured on the wing, one specimen being taken from the clutches of a predaceous Dipteran. *Philonthus puella* in deer and cow dung, chiefly in the latter.

*Goniocetena pallida* was abundant on hazel and willows, *Dorytomus salacinus* being also common on bushes of the latter.

Beating fir-tops produced *Eros aurora*, *Ernobius nigrinus*, *Cryptophagus cylindrus*, *Tomicus bidentatus*, *T. quadridens*, etc.

*Zeugophora turneri* was very scarce on aspens, the beetle evidently not being on, as it should occur in numbers. Several specimens of *Epuraea silacea* were taken on birch stumps, and *Agathidium rhinoceros* scarce in the woods.

A fine variety of *Coccinella hieroglyphica* was found on a patch of *Sphagnum*, the shoulder-marks being confluent in two semicircles. *Silpha opaca* and *S. nigrita* were picked up on the roads, one of the latter being infested with an enormous stout intestinal worm, very many times longer than the beetle. Several specimens of *Patrobis excavatus* taken in a sand-pit were also infested with a smaller and thinner worm. I hope to visit Braemar again; the air, beautiful scenery, and mountains well stocked with deer, apart from the insects to be found, make it an ideal place in which to spend a holiday.

### Differences of adaptability to climatic environment in certain Nearctic Papilionids.

By CECIL FLOERSHEIM, B.A., F.E.S.

I have been much struck during the past few years by the great differences in adaptability to climatic environment shown by the various kinds of Nearctic Papilionids I have bred in my butterfly-house. Indeed, the species which I should have thought most likely to become single-brooded in England has remained persistently double-brooded at least, whilst that which I thought I should stand very little chance of restraining from its habit of producing several generations

in the course of the year, has proved the easiest of all to cope with in this respect.

*Papilio (Jasoniades) glaucus* (*turnus*) is said by American entomologists to be single-brooded in the extreme northern parts of its habitats, yet, in 1906, the larvæ which I bred in my butterfly-house, in spite of being removed to a specially cold, well-thatched, apple-house immediately after they had spun up for pupation, without exception, produced imagines early in September. Again last year, cold and wet as the season was, I was unable to induce any of my *J. glaucus* pupæ to go over to the winter, but the butterfly obstinately kept on coming out until well on into November. I do not think that the pupæ from which my *J. glaucus* are bred come from the extremely southern part of the range of this species, as, on an average, the black females are only in the proportion of one to four to the yellow ones. With regard to Scudder's statement that some of every brood of this species go over the winter as pupæ, I can only say that I have never yet had one of the first brood that did so, though, of course, the number of pupæ I have been successful in bringing through at present has not been large.

On the other hand, having succeeded for the first time in getting some of the foodplant of *Euphœades troilus* for my butterfly-house last year, I managed to rear about three dozen pupæ of this species. Now these, in spite of being left out-of-doors and exposed to whatever sunbline there was until the middle of October, one and all went over the winter, the butterfly being at least double-brooded in its natural habitat, and a denizen of a more southern part of the United States, upon the whole, than *Jasoniades glaucus*.

With *Papilio polyxenes* (*asterias*) my experience has been exactly the reverse, and, on the only occasion upon which (1905) I reared a large quantity of this species, the whole of the pupæ of the first brood gave rise to imagines early in August, and I was able to feed up a second brood, which all hybernated as pupæ.

But it is with *Laertias philenor*, a butterfly of which I breed a fairly large quantity every year, that my experience has been strangest. According to Scudder and other American entomologists this species produces several broods in the year in America. It is said to oviposit even as late as October. It is the only representative of the great tropical family of pharmacophagous Papilios in the United States, and one would expect (it being a southern butterfly which has spread its range northwards, not, as in the case of *J. glaucus*, a northern butterfly which has spread its range southwards) that its habit of producing more than one brood, would be deeply ingrained in it. However, this is so far from being the case, that, in spite of my not collecting the pupæ of this species till October, never more than from about three to fifteen per cent. (according to the warmth or otherwise of the early autumn) produce imagines, but here, at least, it becomes practically a single-brooded species under natural conditions. It seems to me that this extraordinary difference in responsiveness to environment must prove an important factor in the survival or non-survival of species at times of great climatic changes in the earth's history, and I thought it worth drawing attention to in consequence.



## Early Summer amongst the Butterflies of the Rhone Valley.

By JOHN ALDERSON.

(Continued from p. 187.)

On the Ollon side of Charpigny the hill is bounded by precipitous cliffs, where a few newly-emerged *Pararge maera* were flying about the rocks. The two "swallow-tails" were both common at the highest point in Charpigny, and occasional *Euvanesa antiopa* flew rapidly past; one specimen sitting on the leaf of a tree was netted, but its condition was very ragged. A few *Erebia medusa* were flying in the fields, and one ♂ specimen taken has the fulvous markings on the upperside of the forewings quite as wedge-shaped, and as bright, as those of *E. ceto*. A single *Cyclopides palaemon* was taken, and a few *Hesperia malvae* were noted. The return journey was made through the woods on the St. Triphon side, where *Pararge egeria* var. *egerides* was added to the list, a few specimens, in a more or less worn condition, flitting about the woodland paths.

May 23rd was another ideal day for insect life, although the heat proved very oppressive for collecting. The morning was spent on the marshes lying on the Rhone side of the railway, between Aigle and St. Triphon; but the number of species met with here was strikingly small. *Melitaea aurinia*, fairly common, but very worn, *Aporia crataegi*, in fair numbers and in prime condition, and *Issoria lathonia*, of which I took the first decent specimen since my arrival, were the only species of any interest. On the opposite side of the railway *Agriades sylvanus* was now out in numbers. In the meadows leading to the Gryonne *Melitaea parthenie* was swarming. I spent some time working for this species and got a very nice series. Here, and in other lowland localities where the species was found, *M. parthenie* varied little from a well-defined form, which there is no danger of confounding with *M. athalia*, and it was not until I got upon the Simplon that I came across *M. parthenie* with a tendency towards the *M. athalia* facies. In the specimens of *M. parthenie*, which I have from the lowlands, variation is slight, and generally confined to the intensity of the ground colour, and the development of the transverse bands. In some of the St. Triphon specimens the central transverse band on the upper surface of the forewings is strikingly developed.

The sun was now blazing fiercely, and the meadows were swarming with butterflies, a large number of species being on the wing. *Colias hyale* was most abundant, and *Erebia medusa* and *Melitaea cinxia* were both common. Amongst the "blues," *Polyommatus icarus* and *Agriades thetis* were both frequent, and I was delighted to make the acquaintance of that lovely "blue," *Polyommatus hylas*, which was just emerging; flying in its pristine beauty in the brilliant sunshine, it is indeed a lovely little gem which cannot fail to inspire admiration; one specimen of ab. *nigropunctata* was taken here. *Venilia maculata* was noted flying in the meadows. A single specimen of *Eugonia polychloros* was seen flying over the Gryonne. I stayed here until nightfall with the idea of working amongst the "blues" after they had taken up their resting-positions; but I found it not such an easy matter to box them, for if one individual flew off, about fifty would follow from the grass clump. I took nice series of both *Cupido osiris* (*sebrus*) and *Plebeius argyrognomon*, one ♂ of the former

having the spots on the underside of the hindwings almost obsolete; whilst the females of *P. argyrognomon* show a very strong tendency to blue suffusion on the upper surface of the wings. The specimens of this species run to a good size from this locality.

I visited the Pont de Pierre, near Sonzier, on May 25th, and the weather conditions were generally favourable for collecting. The train was taken from Aigle to Montreux, and thence by M.O.B. to Chernex, walking from that station across to the Pont de Pierre *via* Sonzier. Scarcely any butterflies were seen until Sonzier was passed; between this place and the Pont de Pierre, a fair number of species were seen, but none of them was at all common. One or two nice *Papilio machaon* were taken, along with a few newly-emerged *Polyommatus hylas*. The few *Melitaea parthenie* seen were of no especial form. On arriving at the bridge, I found it very favourable collecting-ground, for insects were flying in some numbers, both with regard to individuals and species. In the chief object of my quest I was disappointed for Mr. Wheeler had told me that here I would find *Melitaea aurinia* as common as it was variable. Common it certainly was, but I was too late for it, for nearly all those captured were too ragged to retain. Here, for the first time, I saw how butterflies swarm at damp places. On one side of the road the ground was inclined to be marshy, and in one or two places the moisture had overflowed on the road. For certain species these damp places appeared to possess an irresistible attraction, and, to an entomologist who is unfamiliar with the sight, it is a wonderfully interesting spectacle to witness such masses of butterflies continually in motion, struggling either to retain or improve their position. Some non-entomological passers-by were also struck by the sight, and watched the swarms with curious interest. The swarms were composed chiefly of *Cupido minimus*, with a fair sprinkling of *C. osiris* (sebrus), *Cyaniris semiargus*, *Polyommatus icarus*, *Agriades thetis*, and *Hesperia malvae*, with an occasional *Polyommatus hylas*. I do not remember seeing any ♀ insects among these swarms. Amongst the *A. thetis* taken were a fine ab. *hyacinthus*, and a well-marked ab. *puncta*. Several *Cyclopides palaemon* were darting about over some rough, marshy ground on the hillside, and those netted were in prime condition. *Hesperia serratulae* and *H. alveus* were also taken. *Brenthis euphrosyne* was flying commonly about the roadway above the bridge, and here I first met with *Polygonia c-album*, a hibernated specimen. *Melitaea cinxia* was in good condition, and not uncommon, and a single *M. athalia* fell to the net. *Colias hyale* was very common, with *Euchloë cardamines* less common, and *Leptosia sinapis* was occasionally noticed. Single examples of *Pararge egeria* var. *egerides*, *Celastrina argiolus* and *Powellia sao* were taken. As heavy clouds were now gathering, the return journey to Montreux was made rather hurriedly down the delightful Gorge du Chauderon. Just as the train reached Aigle the rain came pelting down, followed by a terrific thunderstorm. This storm proved to be the breaking-point of the spell of fine weather, for after this date the weather proved very variable.

The following day, May 26th, was practically sunless, with very low temperature and rain at frequent intervals. Almost similar conditions prevailed the next day, the only improvement being that there were brief and distant intervals of sunshine. After lunch I went by train to Bex, walking back through the fields bordering the railway to St.



Triphon; but, except during the brief intervals of sunshine, very few insects were on the wing. Near the Gryonne, I was very pleased to get some ♀ *Melitaea parthenie*, for nearly all those I had seen hitherto were ♂s. On the Gryonne banks a few "blues" were picked up, including an extremely blue ♀ *Plebeius argyrognomon* having almost the appearance of a ♂, except for a row of black marginal spots on the upper surface of the hindwings.

The next day the outlook was again disappointing, the day differing from that preceding only in being colder and duller, with the sky more full of rain clouds, and being in direct contrast with the weather of the previous week, when one was being scorched by the blazing sun. A walk up the Sépey Road proved almost fruitless, the only butterflies seen being occasional specimens of *Pieris rapae*, *Leptosia sinapis*, *Cyaniris semiargus*, and *Cupido minimus*. It rained heavily from noon until late in the evening, and the prospects of favourable collecting weather appeared very remote, for notice had been issued to the owners of vineyards to expect cold weather with frosty nights.

However, the following day, May 29th, opened much brighter, with the sun shining in a fairly clear sky. I took the train to Villeneuve, walking thence up the Tinière Valley. As the day wore on the sky became more overcast, but there were fairly long intervals of sunshine, and the temperature was higher than that of the preceding days. After passing the reservoirs, *Cycloptides palaemon* and *Powellia sao* were taken as they flitted about some rough ground by the roadside. Further up the valley, on a grassy hillside leading up to a chalet, several species of butterflies were found commonly, including *Melitaea parthenie*, *Colias hyale*, *Nemeobius lucina*, *Cyaniris semiargus*, and *Cupido osiris* (sebrus), with occasional *Melitaea cinxia*, and *Erebia medusa*. Following the road up the valley, a footpath crossing the stream by a bridge led to a sheltered little corner, where wild flowers grew luxuriantly. Here Mr. Wheeler had told me to look for *Aricia eumedon* and *Chrysophanus hippothoë*. The first insect netted as it was resting on a flower proved to be *A. eumedon*, but a careful search produced no further specimens, nor was *C. hippothoë* found. With the addition of *Loweia dorilis*, the species were the same as those seen further down the valley. Regaining the road, I pushed on up the valley to where the road crosses the stream over a stone bridge, taking a footpath to the left which led to some favourable collecting ground on a steep hillside. In the intervals of bright sunshine it was delightful collecting at this spot, with a splendid view of the Valley of the Tinière spreading out below, and the head of Lake Geneva in the distance. Here the species previously noted were flying more commonly, with *Melitaea parthenie* and *Erebia medusa* in some numbers. One or two more *Aricia eumedon* were found, and *Agriades thetis* was fairly common. *Hesperia malvae* occurred here, as well as occasionally on the way up the valley, whilst *Powellia sao* was quite common, with a habit of quartering the ground similar to that of some of the "swift" moths. *Tanagra atrata* was not uncommon. *Ennychia octomaculata* was noted, and the presence of *E. nigrata*, *Pyrausta purpuralis*, and *Acidalia ornata* brought to my mind another hillside more familiar, and almost as steep—Reigate Hill.

The morning of May 30th opened gloriously fine, with a brilliant sun and a cloudless sky, although the wind was blowing rather strongly. I had accepted the invitation of a Swiss friend to meet him

at Vevey, and go for a ramble over the country lying behind Mt. Pélérin, thence to Attalens, returning by Puidoux and Chexbres to Rivaz. On the slopes of Mt. Pélérin very little was seen, but the strong wind which was blowing probably accounted for the scarcity of insects. Here I first came across *Melitaea didyma*, a ♀ being taken on the way up; and I was pleased to net a nice ♀ *Colias edusa*, for I had not yet seen this species in any numbers, nor, indeed, did I find it at all common in any locality during my visit. On the brow of the hill a few *Iphiclides podalirius*, in good condition, were captured.

Between Mt. Pélérin and Attalens the eye was arrested by the strikingly beautiful appearance of the fields of narcissus in full bloom, which, at a distance, had the semblance of masses of virgin snow. In the sheltered meadows insects were not uncommon, and the fine condition of *Erebia medusa* suggested a later emergence than at St. Triphon. *Colias hyale* was abundant, while *Melitaea parthenie*, *M. cinxia*, *Nemeobius lucina*, *Powellia sao*, and *Nisoniades tages* were not uncommon. During the remainder of the walk little of any further interest was noticed, but the day was too windy for collecting, although ideal in other respects. The following day I shifted my quarters to St. Maurice.

Vernayaz! I went there on June 1st with high expectations, for the books had led me to expect an entomological "Tom Tiddler's" ground, where the butterflies are almost anxious to fly into one's net, and where, on a favourable afternoon in June or July, one can rely on encountering quite a goodly proportion of the species which constitute the butterfly fauna of Switzerland; for with what frequency does the phrase, "under the cliffs at Vernayaz," occur in the entomological books and magazines! The day was bright, the sun hot, and, although a rather gusty wind gave rise to some misgivings, I found that "under the cliffs at Vernayaz" it was both sunny and sheltered; and butterflies were flying, not in such numbers as I had anticipated, but enough, and in such variety of species as, to make it one of the most interesting days of the trip.

After the first day or two of my visit I had been accustomed daily to make one or two additions to my list of species seen, but on this, my first visit to Vernayaz, I came across no fewer than eleven species I had not previously met with. These were—*Erynnis lavaterae*, *Loveia alciphron* var. *gordius*, *Polyommatus amanda*, *Parnassius apollo*, *P. mnemosyne*, *Melitaea dictynna*, *M. phoebe*, *Epinephele janira*, *Enodia hyperanthus*, *Erebia stygne*, and *E. evias*.

During the forenoon I worked under the cliffs in the direction of Martigny. *Agriades sylvanus* and *Melitaea dictynna* were in some numbers, flitting about the marshy ground, where also a single very fresh specimen of *Polyommatus amanda* was taken. I was very pleased to take my first *Parnassius apollo*, which was flying about the boulder-strewn ground at the foot of the cliffs; a few other specimens were noticed, but the species was not common. A ♀ *P. mnemosyne*, with the abdominal sac, was taken on the same ground; but it was already showing signs of wear, and other specimens subsequently seen were in quite ragged condition. *Melitaea cinxia* was common, flying about the pathway, and *Pararge egeria*, of the *egerides* form, was flitting in and about the bushes. At moist places on the footpath numbers of ♂ *Aporia crataegi* were crowding and jostling, and a single sweep of the net captured no fewer than twelve specimens, all in perfect



condition. Sitting on the path with wings widespread, was a ♂ *Loweia alciphron* var. *gordius*, the brilliant upper surface of its wings reflecting the bright sunlight. Seen thus, it is indeed an insect to arrest the eye, especially if it be the eye of an entomologist gazing on it for the first time. The warm summer day had induced a few scattered specimens to burst their pupal skins, but the species was not yet fully out. On the boulder-strewn slopes rising steeply from the rugged pathway, a single example of *Erebia stygne* was taken, with two specimens of *E. evias*, all in very fresh condition and, on the same ground, *Erynnis lavaterae* and *Hesperia carthami* were occasionally noticed, dashing to and fro with quick "skipper" flight. One of the new species found here was *Melitaea phoebe*, which was fairly common, and, judging from its condition, recently emerged. It appeared to be very fond of flying backwards and forwards along the footpath, a very convenient habit from the captor's point of view. Of a much different category was the flight of *Iphiclides podalirius*, which was strong on the wing, ranging everywhere, showing little disposition to settle, and although very common, was very difficult to capture. A very fine example of the ab. *puncta* form of *Agriades thetis* was netted, and amongst the other species noted were *Polyommatus icarus*, *Pararge maera*, and *P. megaera*. As I wished also to work up the opposite bank of the Rhone towards Branson, I retraced my steps in the direction of Vernayaz. On the ground lying between the Gorges du Trient and the Rhone, I found *Plebeius argyrognomon* in profusion, and *Coenonympha pamphilus* almost equally common. In the thickets *P. egeria* var. *egerides* was very common, and, by the side of the Rhone, I took my first specimen of *Enodia hyperanthus*, with a single example of *Anthocharis simplonia* var. *flavidior*, which was sitting in the sunshine on a patch of sand, with wings widely spread. On crossing the Rhone I found *Aporia crataegi* swarming at the puddles, and *Parnassius apollo* flying fairly commonly on the steep slopes, but difficult to capture. *Agriades thetis* and *Aricia astrarche* were not uncommon; both sexes of *Polyommatus hylas* were taken here, only ♂s of this species having been met with hitherto. *Colias hyale* was very common, and here I took the first specimen of *Epinephile ianira*. Another specimen of *Erebia evias* fell to the net, and a few very nice *Hesperia carthami* were taken, but the wind blew very strongly in this quarter, and it was doubtless due to this fact that insects were not so numerous as on the opposite side of the valley; so I re-crossed to the Vernayaz side where I picked up a few more *Melitaea dictynna* and *Loweia alciphron* var. *gordius* before the sunshine prematurely disappeared; for the high, overhanging cliffs shut out the sun's rays from this favoured butterfly corner at an early hour in the afternoon.

The following day, June 2nd, was fine and bright, with a rather gusty wind blowing. After lunch I took the road from St. Maurice behind the Hôtel du Simplon, leading to the bridge which crosses the Rhone at Lavey-les-Bains, returning by the opposite bank of the Rhone, and entering St. Maurice by the picturesque old Roman Bridge. From an entomological standpoint the ramble was not very productive. On the St. Maurice side of the Rhone very little was seen beyond an occasional *Pararge maera* and *P. megaera*. After crossing the river, *Aporia crataegi* was observed in numbers on the cultivated plots of ground, and in the meadows lying at the foot of the hillside. A single

specimen of *Cyclopides palaemon*, in perfect condition, was taken flitting along the footpath, and a solitary, very ragged *Erynnis alceae*. Some marshy ground near the road, leading up to Lavey, produced *Melitaea dictynna*, and here I first came across *Brenthis ino*, a perfectly fresh ♂ being netted. A large blue butterfly which attracted my attention turned out to be only a ♂ *P. icarus*, but of exceptional size. At the foot of the wooded hillside one or two *Melitaea phoebe* were flying, and in the meadows *Enodia hyperanthus* was making a sporadic emergence.

The next day, June 8rd, I left St. Maurice by an early train for Sion, where I hoped to find *Melitaea aurelia* and *Polyommatus amanda* in some numbers. The day was very hot and oppressive, and the sky cloudy, with a hazy sun. At Vernayaz, two days previously, I had only been able to find a single *P. amanda*, but here, in the marshes by the side of the Rhone, the species was fully out, and, judging by the condition of some of the specimens, had been out for some time. The insect was very common, and I had no difficulty in picking out nice series of both sexes in very good condition. *Plebeius argus (aegon)* was very common all along the Rhone banks, with *P. argyrognomon* in fewer numbers. On reaching the fields where *Melitaea aurelia* occurs, I found it flying commonly with occasional specimens of *M. parthenie* and *M. dictynna*. *M. aurelia*, though, was almost over, and I had to work very hard for a fair series in presentable condition; the specimens varied a good deal in size, ranging from 28mm. in the ♂s to 39mm. in the ♀s. A few *Pararge egeria* var. *egerides* were flitting about the copses, where also occasional specimens of *Leptosia sinapis* and *Augiades sylvanus* were seen. Amongst other species noted were *Gonepteryx rhamni*, *Vanessa io*, *Aricia astrarche*, *Cupido minimus*, and, although a careful watch was kept for *Everes alcetas*, none was seen. Soon after midday the sky assumed a most threatening aspect, and insects suddenly vanished; so a hasty return was made to Sion station, which was reached just as the rain came pouring down. It rained heavily during the remainder of the day and throughout the night.

The following morning broke fine, but the temperature was very low, with a dull, heavy sky and a very strong wind blowing. It was not a morning to flatter one's hopes, but towards midday the sun began tentatively to peep through the overcast sky, and induced me to take train to Vernayaz, where I hoped to pick up something under the shelter of the cliffs; but I found very few insects on the wing there, and these were in evidence only during the brief and distant intervals of sunshine. A certain amount of compensation was derived from the capture of about a dozen *Loweia alciphron* var. *gordius*, in splendid condition, though all except one were ♂s. Some of the specimens captured of this species were in perfectly fresh condition, save for small pieces chipped out of the wings through some obscure cause. The capture of a very ragged specimen of *Scolitantides baton* added another species to my list. Other insects noted were *Iphiclides podalirius*, *Parnassius apollo*, *Erynnis lavaterae*, *Powellia sao*, *Pararge maera*, and *Agriades thetis*. Following its usual custom, the rain started falling in the early afternoon, and came down heavily before I reached Vernayaz station.

(To be continued.)



**Some thoughts engendered on turning over the pages of Berge's Schmetterlingsbuch, 9th edition, 1910.**

Probably the earliest systematists to use the general characters of the early stages—egg, larva, pupa—in the classification of lepidoptera were the Viennese lepidopterists, Denis and Schiffermüller. By the time they wrote the *Systematisches Verzeichniss*, in 1775, they had accumulated many general facts of larval and pupal structure, possibly quite unknown to Linné. Antecedent to Linné the essential and main work of the entomologist was the study of the life-history of species, and it still remains a fact that some of the descriptions of Réaumur and other authors, now nearly 200 years old, comprise the best accounts of the natural history of the species dealt with. Linné's *Systema Naturae* was an attempt to deal with the insects already described, whether in one or more stages, and was, as it were, a short catalogue of then known species. Its great value, of course, was the elementary one of enabling entomologists to know what they were talking about, and bringing under a "name" the various descriptions of the same insect made by different authors.

The application of the name did not at first alter the general view of what was essential in entomology, *viz.*, the working out in detail of the main features and characters of an insect in all its stages. This is well-illustrated by the line taken in the work of Esper and Borkhausen, who were undoubtedly the two greatest naturalist-entomologists, not only of their age, but from their point of view, with the exception, perhaps, of Zeller, that Germany has yet produced. This phase is less satisfactorily illustrated by Hübner's works, in which the imaginal descriptions are, to a certain extent, divorced from the biological account of the early stages. As time went on, and the known species became more numerous, works, to hold a detailed account of the life-history of the European species, became very bulky and expensive, and the life-history parts were cut down to the minimum limits, and Ochsenheimer and Treitschke, Stephens, Heinemann, and others, illustrate excellently the slow decadence from the excellent natural history of Esper and Borkhausen to the mere catalogues (miscalled text-books) of Stainton's *Manual* and Frey's *Lep. der Schweiz*. From that time onwards, real biological entomology, as exhibited by an account of the life-histories of species, has largely been divorced from the systematic or catalogue making section, and where an attempt has been made by an entomologist to show that he was also a naturalist, as in the case of Boisduval, Stainton, etc., the life-histories of the species studied have been published separately, but the catalogue-maker has gained more and more strength, in fact, the study of life-histories has been for many years considerably discounted, and left to very few advanced observant naturalists, *e.g.*, Curtis, Stainton, Millière, Buckler and Hellins, etc., or to individual entomologists who have become interested in individual species, and published their results in the various journals in connection with the local societies of France and Germany, or in our English magazines.

The ultimate result of this has been fatal from a scientific "natural history" point of view. For the last 50 years, series of books dealing almost entirely with the Macro-lepidoptera, have flooded the British and German markets, rarely anything useful has been collected and

collated therein, and, on the plea, that they are to aid beginners rather than intended to be of service to men who wish to become students, it has resulted that a whole series of such books has been printed, containing not one single iota of original information, often full of the grossest blunders relating to the commonest species, copied from authors who flourished at least 100-150 years ago, usually due to ignorance of the synonymy used by the original describers whose facts are correct enough but apply to other species than those to which the modern book-maker has applied them. These books are, by the confession of the authors, not meant to help the real entomologist, but the authors all the same would be grossly indignant if one suggested that, like the famous razors, the books were made to sell.

Of recent years, Germany has stood pre-eminent in this class of book, and England stands but little behind, but, in one respect, Germany has outdistanced England completely, and that is in the excellence of its illustration by various colour processes. The result has been that several editions of some of these works have been published, and have paid merely because of the plates. One of our chief purveyors of these German works in England recently told the writer that it was no uncommon thing for the English buyer to take out the plates and leave the letterpress (so useless is it) in the shop, whilst the profit on these works was so much higher than that obtained on English publications of good class, that it paid the English bookseller to push the German product. Whilst one would, in the cause of science, therefore, have had no good cause for complaint against these works, had the letterpress really been on the same level as the plates, or even accurate in spite of its being so absolutely elementary, yet, as pointed out above, the letterpress is really beneath contempt and hopelessly useless for any scientific purpose. These are picture books, usually accurately named as to the pictures, and nothing more.

That such books represent the general level of entomology throughout Europe is certain. In most of the countries of Europe, collectors flourish exceedingly, butterflies and moths are caught in thousands, sold in thousands, to make collections, and for no further scientific purpose whatever, and these books enable these collectors to name their specimens more or less correctly, and this is all they want. Even a great deal of the experimental work of lepidopterology has been carried out for commercial purposes, and hybrids are reared, aberrations and varieties (local races) described, not to add primarily to scientific knowledge, but for the purposes of sale, and to add value to the specimens by having a name attached to them; whilst we heard, during a recent trip to Switzerland, of a well-known Doctor attached to a Continental University who collects all the specimens he can whilst on his holidays, sells all not required by himself, and so tries to pay the expenses of his holiday out of his duplicates. That all this must react unsatisfactorily on scientific entomology is quite apparent.

One of the most popular of this superficial class of illustrated works has for years been Berge's *Schmetterlingsbuch*, of which eight editions had been published under various editors before 1910. This year a 9th edition has been issued,\* for which Dr. Rebel is responsible.

\* E. Schweizerbart, Stuttgart. Pages 1-114, 1-509; 53 coloured plates; 219 text figures.



Probably no man in Europe was better fitted to bring a book of this character up-to-date, and, if he has not given us a scientific text-book, he has so revolutionised the original that there is little or nothing of Berge left in it, and he has based it on more modern lines, so that it is, without doubt, the best picture book of its kind now published in Europe, with fewer palpable blunders (though they are still numerous enough, especially in the application of wrong names to varietal forms), much more detailed and accurate letterpress and equally well illustrated with about 1600 figures on 53 coloured plates and 219 text illustrations. Such a book as this must go for the raising of the collector through Central Europe and give him a better elementary idea of what has been done and what possibilities the study of entomology holds out. The twenty preliminary chapters on the general subject are good, contain a short summary of the information obtainable on the subjects treated, together with a fair number of references, so that the collector, if interested in any particular branch, can go further on with its study, whilst, in addition, there are excellent indexes to enable one to find one's way about what is necessarily a large book. The plates are on the whole excellent, although some are not quite on the same level as others.

The inequality in different parts of the work is shown much more markedly, however, in the letterpress. In some groups, the result is—so far as the treatment of the imagines is concerned—fairly ample, in other parts rather less complete. This is particularly noticeable in the butterflies, Sphingids, Lachneids, Attacids, Noctuids, Athrocerids, Psychids, etc., which, having already been more or less completely monographed, at least locally, are in the higher plane, whilst the Geometrids are altogether in a lower plane, although one suspects that, had more time been given to the actual working out of references, the details known about the Geometrids should be quite equal to those of the other groups, but these, being more distributed and less easily get-at-able, would have involved considerable time and labour, more, evidently, than the writer felt called upon to spend.

Biologically, the life-histories of the species are quite as hopeless as usual. The description of the egg usually occupies about a line of print, that of the larva half a dozen lines, and the pupa two or three lines—even when the life-histories of the species is well-known; one suspects this to be the proprietor's, rather than the author's, fault, but the hopelessness of such descriptions is well-illustrated by that of the egg of *Drymonia trimacula*—"Das Ei kalbkugelig, weissgrün, fein punktiert," or that of *Hemaris tityus* (which is, by the by, still called *scabiosae*, Zell.)—"Das Ei kugelig, hellgrün," or that of *Cerura furcula*—"Das Ei schwärzlich. Die Puppe hellbraun mit grünlichen Flügelscheiden," etc. One may note here that British authors have no cause for complaint against Dr. Rebel's reference to their work. Scarcely a page occurs on which a British species is mentioned without a reference, and on some pages a dozen may occur; Barrett, Tutt, Buckler and Hellins, are quoted wholesale, and their descriptions summarised—whilst, of the German entomologists, the work of their leading naturalist-lepidopterist, Max Gillmer, is repeatedly quoted.

On the systematic side, in which perhaps greater progress has been made during the last twenty years than in almost any other branch, matters remain *in statu quo*. The author appears, in spite of recent

discoveries and work, to follow the Standinger and Rebel *Catalog* of 1901. Poor *boeticus* and *telicanus*, the Everids, Plebeids, and true *Lycænas* still find themselves in a common stew under the name *Lycæna*. At the other end of the work *betulina*, Zell., and *salicolella*, Bruand, are put into *Fumea*. One would urge that such glaring inconsistencies as these should, at least, be remedied, even if all modern work that has been accepted be not recognised; whilst one wonders why the *Lemoniidae* are still sandwiched between the *Dimorphids* (*Endromidae*) and *Attacids* (*Saturniidae*). An author should be a teacher and stand for progress, and Dr. Rebel has just missed, in his useful work, touching that modern view of the things he deals with, by means of which he would have brought the younger entomologists into line with what has been done by special workers since the publication of the 1901 *Catalog*, and would have (1) enabled them, through the means of his work, to pick up without effort the strands of such advances as have been recently made, (2) prevented them assuming (as beginners always must assume) that in Dr. Rebel's mind the *Catalog* still illustrates all that is best and newest in this excellent lepidopterological world of ours. In the use of his terminology, Dr. Rebel is orthodox and accurate, following out none of the new-fangled ideas relating to subspecies and forms, hybrid-species, and hybrid-subspecies, by means of which certain lepidopterists with much energy and little entomological knowledge are trying to force their opinions to the front. Science must be based on facts and logic, not words and bluster, and we are glad to see that Dr. Rebel maintains the old and excellent methods which the newer terminologists seek to destroy; "varieties" for local races, "aberrations" for occasional or frequent sports, "hybrids" for crosses between distinct species, and "mongrels" for crosses between forms of the same species, appear to be good enough for Dr. Rebel as they are for us. Dr. Rebel must forgive us our bowl. We recommend his book to our readers as the best work of its kind yet published, and advise them to get it in preference to any of the other illustrated works on European lepidoptera now laying claim to their spare cash. Certainly no collector of European lepidoptera, or butterflies only, should be without it.

### NOTES ON COLLECTING, Etc.

ABUNDANCE OF *VANESSA IO*.—There has been a noticeable increase in the numbers of this species here during the last few seasons; indeed, during the present summer, both in the larval and the imaginal states, it has been more abundant even than *Aglais urticae*. I counted two large broods of larvæ on one patch of nettles in mid-July, while, at the present time, the Hemp Agrimony (*Eupatorium cannabinum*), which I had planted to attract the Vanessids in my kitchen-garden, has rarely less than a dozen imagines feeding on it at a time.—CECIL FLOERSHEIM, B.A., F.E.S., Pennyhill Park, Bagshot, Surrey. August 31st, 1910.

*THAIS MEDESICASTE* AB. *HONORATHI* AT DIGNE.—Whilst collecting *Rhopalocera* at Digne, from May 30th to June 11th, 1910, I had the good fortune to take a specimen of *Thais medesicaste* ab. *honoratii* on June 9th. I found it just settling on the steep and stony path which commences the ascent of the hill "La Collette" from the Dourbes road, about 10.30 a.m. I did not succeed in getting any of the ordinary type of the *Thais*, but, on showing the above



capture to the local naturalist at Digne, Mr. Cote Victor, he at once pronounced it to be *honoratii*, which, he added, he had never taken himself on the wing. During the time I was at Digne I succeeded, with the aid of Mr. Rowland-Brown's valuable notes published in this magazine in 1900, in capturing a total of 800 odd specimens including all the species on Mr. Rowland-Brown's list for the same period, with the exception of *Klugia* (*Thecla*) *spini*, *Nordmannia* (*Thecla*) *ilicis*, and *Melanargia galathea* var. *procida* which had not emerged. On the other hand, *Erebia erias* were fairly plentiful and some in very good condition. I succeeded in getting fine long series, in good condition, of *Euchloë euphenoides*, *Limenitis camilla*, *Cupido osiris* (*sebrus*), *Glaucopteryx cyllarus*, *Agriades thetis* (fine large form), *Aporia crataegi*, *Melitaea cinxia*, *M. didyma*, *M. aurinia* var. *provincialis*, *Colias hyale*, *Lowia alephron* var. *gordius*, *Nemeobius lucina*, *Papilio machaon*, *Brenthis dia*, *Iphiclides podalirius*, *Agriades coridon*, *Nisoniades tages*, *Hesperia malvae*, *Brenthis selene*, *B. euphrosyne*, *Euchloë cardamines*, *Pieris brassicae*, *P. napi*, *P. rapae*, *Pararge moera*, besides many other butterflies in smaller numbers. *Gonepteryx cleopatra* was scarce and I only succeeded in getting one male and four females. Out of thirteen days, ten were perfect, and three sunless and thundery.—E. B. ASHBY, 33, Park Road, Whitton, Middlesex.

A DAY'S LEPIDOPTEROLOGY NEAR SCUTARI.—The following butterflies were seen by me in July, 1909, and June 6th, 1910, in a large rough garden at Erenkeui, some five and half miles from Scutari on the Asiatic side of the Bosphorus—*Iphiclides podalirius* a few, *Papilio machaon*, twice observed, *Pieris brassicae*, *P. rapae*, *Pontia daplidice* common, *Colias edusa*, *Gonepteryx rhamni* very common, *Pyrameis cardui*, *P. atalanta* a few, *Polygonia egea* common, *Vanessa io*, one seen, *Euvanessa antiopa* one seen, *Epinephele jurtina* a few, *Satyrus hermonione* two seen, vii. 09, *Libythea celtis* several seen, 30. vi. 10, *Chrysophanus thersamon* a few, *Rumicia phlaeas* very common, *Klugia spini* occasional specimens, worn at the end of June, *Polyommatus icarus* very common, *Aricia astrarche* common, *Celastrina argiolus* very common in July, *Adopaea flava* (*thaumas*) one seen, *Erynnis alceae* worn in late June. *Dryas pandora* is not uncommon at Therapia, on the European side of the Bosphorus, and in the park attached to Yildiz Kiosk, the palace of the Sultan Abdulhamid, in the northern suburb of Constantinople. I saw a worn specimen of this butterfly also at Dibra, a wild town some 3000 feet above sea level in Central Albania, in October, 1909. A few days earlier *Papilio machaon* had been common at Elbassan, about 1200 feet above sea level, in West Central Albania.—PHILIP P. GRAVES, 1, Lauriston Road, Wimbledon. July 20th, 1910.

LEPIDOPTERA AT RAGWORT BLOOM IN RICHMOND PARK.—Whilst cycling through Richmond Park on the morning of August 12th, I noticed that a mass of ragwort in full bloom was attracting a good number of insects, although on inspection I found that only three species of lepidoptera were represented. Of these the commonest was *Rumicia phlaeas*, both sexes of which were flying in numbers, the majority being in good condition. Scarcely inferior in point of numbers was *Charaxes graminis*, though all appeared to be ♂s, and, without exception, were in a very worn state. The third species, *Hydrocya nictitans*, was not so common, but it was in fairly fresh

condition, and both sexes were attracted by the flowers.—J. ALDERSON, 14, Dafforne Road, Upper Tooting, S.W. August 22nd, 1910.

*HYPONOMEUTA CAGNAGELLUS* AND OTHER LEPIDOPTERA AT LEWISHAM IN 1910.—During the last two or three years I have remarked on the occurrence of *Hyponomeuta cagnagellus* at Lewisham, where it is usually a very common garden insect, feeding on *Euonymus japonica*. In spite of its great abundance last year, the species has been less common during the present season than in any since I first observed it, but what has been more remarkable, is the fact that it has appeared so much later than previously. In other seasons, the bulk of the specimens have occurred in July, sometimes earlier, at other times later in the month, but this year scarcely any specimens appeared in July, and it was not until the past week, August 28th onwards, that the species really emerged in any numbers. During the last few days the species has been common, much less so than usual, but between 4.30 p.m. and 5.30 p.m. several ♀s were to be seen any day on the wing, flying heavily, but for considerable distances, and busy selecting suitable spots for egg-laying. The species is, therefore, at least five or six weeks later than its average time of appearance in this district. I may add also that *Bryophila perla*, now a very local species here, has been more abundant than usual this year; perhaps the abundance is to be connected with the wet season, which may have suited its foodplant, as the walls have been damp enough and the lichens on those by the sides of the Quaggy seemingly rather more abundant than usual, although I have not paid much attention to the fact; at any rate, during the last few days several examples have been noticed on the lamps and at the lighted shop windows in the neighbourhood. The partial second-brood of *Celastrina argiolus*, sometimes not uncommon, has been so far represented only by a single ♂ which I saw resting in my garden on the morning of August 21st. There has been hardly a trace of the work of the larvæ of the second-brood *Cemiostoma laburnella* on the laburnum trees this autumn, very few mined leaves, and scarcely a pupa was found even when looked for. On the other hand, the larvæ of the second-brood of *Gracilaria syringella* scorched the privet leaves as badly as usual.—A. M. COCHRANE, Lewisham. September 3rd, 1910.

## SCIENTIFIC NOTES AND OBSERVATIONS.

PHARMACOPHAGOUS HABIT OF *LAERTIAS PHILENOR*, A PROTECTION AGAINST *ICHNEUMONIDÆ*.—Besides affording it protection from birds and other enemies, the fact that *Laertias philenor* feeds on *Aristolochia*, seems, so far as my own observation goes, to afford it complete protection against *Ichneumonidae* and other parasites. For the last seven years I have received pupæ from the United States, but have never found one infested with any parasite; while those bred in my butterfly-house have been equally free, where all the *Papilio machaon* which had pupated near at hand had been stung, as well as many of the *Jasoniades glaucus*. On the other hand, as I have often found pupæ of *Thais polyxena* infested, I wonder how far this protection applies to the pharmacophagous *Papilios* generally.—CECIL FLOERSHEIM, B.A., F.E.S., Pennyhill Park, Bagshot, Surrey.

EARWIG EATING MOTH'S EGGS.—I had frequently observed the eggs of some insect attached to the stop netting round a tennis court in the



garden, but for a long time could not find out by what insect they were laid. One evening last August, however, I was fortunate enough to find the moth at work and it proved to be the common *Tryphaena pronuba*. After this I several times watched the process and once, while doing so, I observed a common earwig, so far as my recollection goes a male, greedily eating the eggs which the moth had just laid. It did not eat them quite so fast as the moth deposited them, but it evidently made up in appetite what it lacked in speed, as the whole batch, probably about 60, was consumed when I inspected the place the next morning. So far as I am able to judge, the incident is not of very common occurrence, at any rate, when the eggs are laid in this peculiar situation, since several other batches hatched out and the young larvæ, after eating all the egg-shell except the part attached to the tarred string, let themselves down by a thread of silk to the ground, doubtless to continue their lives in the grass. I may say that the moth did not appear to be in any way conscious of the presence of the earwig. I shall endeavour to observe the phenomenon this year again, as these moths always lay their eggs on the netting. The above observation was made at my home at South Shields.—HARRY ELTRINGHAM, M.A., F.E.S., 8, Museum Road, Oxford. July 8th, 1910.

### CURRENT NOTES.

We understand that Mr. J. C. Stevens will dispose by auction, late in October or early in November, the best aberrations of *Abraxas grossulariata* reared during the last three seasons by the Rev. G. H. Raynor. Among them are some very striking insects, such as can only be obtained by rearing the larvæ in very large numbers.

Mr. Charles Owen Waterhouse, ex-President of the Entomological Society of London, was gazetted C.I.S.O., in the list of birthday honours in June last. His long and excellent service in the insect department of the Natural History Museum at South Kensington, is too well-known to our readers to require any comment, and we feel sure that his life-long interest in entomology will be continued in spite of his well-earned retirement.

Another instalment on "The plume moths of Ceylon," viz., "The Orneodidæ," has been received from Mr. T. Bainbrigge Fletcher, R.N., F.E.S., F.Z.S., no doubt our future authority on the world's "plumes." It is an excellent piece of work, with preliminary notes on the early stages (based on European species). Of the four known genera in the superfamily *Orneodes*, *Paelia*, *Microschismus*, and *Triscaedia*, the first and last only have been found in Ceylon. There are some 40 species at present included in *Orneodes*, with remarkable differential features, and no doubt capable of being grouped into quite natural groups when the "all-butterflies-in-one-genus-*Papilio*" stage is passed, and more is known of their life-histories.

Besides giving the original descriptions of the already-described Cingalese Orneodids and their distribution and habitats, Fletcher describes as new species—*Orneodes montigena*, *O. ischalea*, *O. pinalea*, *O. postfasciata*, and *O. microscopica*. The life-history of none of the Cingalese species appears to be known, yet some, at least, ought not to be difficult to work out. Of the new species, *O. montigena* and *O. postfasciata* are excellently figured, as well as nine others of Meyrick's species and one of Hampson's. We could have wished for one more

plate with illustrations of the other new species. We congratulate Mr. Fletcher heartily on this piece of work.

Mr. T. Reuss describes (*Entom.*) a new form of *Gonepteryx rhamni*, a ♂ with black wing tips, as ab. *nigriapicata*.

Messrs. Britten and Newbery give (*Ent. Mo. Mag.*) a revision of the British species of *Ptenidium*, Erichson, and a table based on Flach's paper in the *Verh. z.-b. Ges. Wien.*, xxxix. (1889). It is new to find in the *Ent. Mo. Mag.* the admission of the mythical and nebulous subgenus, but the genus *Ptenidium*, Erichson, is broken up into the subgenera—MATTHEWSIUM, Flach (with *gressneri*, Gillm., *laevigatum*, Gillm., and *turgidum*, Thoms.), WANKOWIZIUM, Flach (with *intermedium*, Wank.), PTENIDIUM, Gr. (with *punctatum*, Gyll., *fuscicorne*, Er., *myrmecophilum*, Mots., *pusillum*, Gyll., *brisouti*, Matt.), GILLMEISTERIUM, Flach (*nitidum*, Heer), so that we get the logical result that PTENIDIUM, Erichson = MATTHEWSIUM, Flach, WANKOWIZIUM, Flach, PTENIDIUM, Erichson, and GILLMEISTERIUM, Flach, in other words, that PTENIDIUM, Erichson, is equal to itself and three other things, which, in the face of our professed binomial nomenclature, appears to be absurd. If the described group-names—*Matthewsium*, *Wankowizium*, *Ptenidium*, and *Gillmeisterium*—are natural divisions, and represent group names next above species, they must be genera, and the useless absurdity termed subgenus falls through. The authors' arrangement—

Genus: PTENIDIUM, Erichson.

Subgenus: MATTHEWSIUM, Flach

Species: *Ptenidium gressneri*, Gillm.

*P. laevigata*, Gillm.

*P. turgidum*, Thoms.

Subgenus: WANKOWIZIUM, Flach

Species: *Ptenidium intermedium*, Wank.

Subgenus: PTENIDIUM, Erichs.

Species: *Ptenidium punctatum*, Gyll.

*P. fuscicorne*, Er.

*P. myrmecophilum*, Mots.

*P. pusillum*, Gyll.

*P. brisouti*, Gyll.

Subgenus: GILLMEISTERIUM, Flach

Species: *Ptenidium nitidum*, Heer

looks to us a trifle absurd as a catalogue production. If the divisions are sound, the arrangement, of course, should be—

Tribe: PTENIDIIDI.

Genus: MATTHEWSIUM, Flach

Species: *gressneri*, Gillm.

*laevigata*, Gillm.

*turgidum*, Thoms.

Genus: WANKOWIZIUM, Flach

Species: *intermedium*, Wank.

Genus: PTENIDIUM, Erichs.

Species: *punctatum*, Gyll.

*fuscicorne*, Er.

*myrmecophilum*, Mots.

*pusillum*, Gyll.

*brisouti*, Gyll.

Genus: GILLMEISTERIUM, Flach

Species: *nitidum*, Heer.

To call the division above species a "subgenus" instead of "genus," and the next division higher "genus" instead of "tribe," appears to us to be merely juggling with the orthodox binomial code. Do not British coleopterists also think so? A good life-history of one of these species would be worth a lot of subgenera.



Mr. J. Ray Hardy mentions (*Ent. Mo. Mag.*) that four or five specimens of a dipteran, new to the British fauna, viz., *Fannia* (*Homalomyia*) *insignis*, Stein., emerged in June last, from an old nest of *Vespa vulgaris* found in Cheshire in February last. Mr. Collin suggests that *Homalomyia vesparia*, Meade, should be compared with the specimens, as well as *H. ciliata*, Stein., possibly the same as *H. vesparia*.

Mr. G. C. Champion calls attention (*Ent. Mo. Mag.*) to the description of the unique British example of *Apion cantianum*, Wagn. (*brevicorne*, Schulsky), of which other specimens might possibly be found in series of *A. filirostre*.

Dr. Wood describes (*Ent. Mo. Mag.*) three more species of *Phora*, viz., *P. haltera*, *P. minutissima* and *P. exigua*. He also gives most interesting notes on a large number of species.

Dr. Joy describes a beetle new to Britain under the name *Cryptophagus fowleri* from Bradfield, obtained in dry wood-dust in old beech trees; it will be probably found mixed with *Cryptophagus scanicus* var. *patruelis* in collections.

The first International Congress of Entomology, held at Brussels, August 1st-6th, proved a great success. A detailed report is promised for our next number. The thanks of all entomologists are due primarily to Dr. K. Jordan, who brought the idea to a successful commencement, and to Dr. Malcolm Burr, who worked so splendidly in its later stages to ensure success. The next Congress is fixed for 1912, and will take place at Oxford—we hope not in early August. A splendid general report by Dr. Burr in *The Times* for August 10th has attracted a great deal of attention already, outside strictly entomological circles.

## SOCIETIES.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY.—*July 14th, 1910.*—SPECIAL EXHIBITION OF *POLYOMMATUS ICARUS*.—Dr. Hodgson exhibited a large number of selected specimens, many of them being blue ♀s and aberrant undersides. Mr. R. Adkin, geographical series, the most striking of which were those from the West of Ireland. Mr. Joy, long series of the spring and summer broods illustrative of seasonal dimorphism in size. Mr. B. Adkin, some very fine examples from the Hebrides, Isles of Scilly, North Cornwall, Ireland, etc. Mr. Turner, a few aberrations in colour, including specimens from several Swiss localities. Mr. Hemmings, one or two remarkable aberrations, including a *thetis*-like ♂, and an underside ♀ with the eyespots showing extreme displacement. Mr. Pickett, a drawer containing the results of many years selection of forms. Mr. Tutt, in summing up the exhibit, considered it one of the finest and most complete ever got together, and stated that nowhere possibly could such a series have been brought together except by the members of the South London Entomological Society. Nowhere throughout its range was the species so extremely variable as in the British Isles, those most nearly approaching the British examples coming from the mountain valleys in the north-west of India. He commented on the geographical distribution of the insect, and especially referred to the rarity of the species in its most eastern haunts—in the Altai Mountains and Amur-

land. BRED CELASTRINA ARGIOLOUS.—Mr. R. Adkin, some bred examples of *Celastrina argiolus* ♀ with much reduced border. EXOTIC BUTTERFLIES.—Mr. Edwards, a box of exotic species of *Apatura*, *Adelpha* and *Limenitis*. VARIATION OF PRAYS CURTISELLUS.—Mr. Sich, specimens of *Prays curtisellus* with ab. *rustica* from Westerham. SELECTED ANGERONA PRUNARIA.—Mr. Pickett, an extremely fine bred series of *Angerona prunaria*, this year's result after twelve years' selection, crossing and interbreeding. Many of the forms were extreme ab. *pickettaria*. DELEGATES' REPORT.—Mr. Step read the report of the Delegates to the Guildford Congress of the South-Eastern Union of Scientific Societies. July 28th, 1910.—OVA AND LARVA OF LAMPYRIS NOCTILUCA.—Mr. Main, the larvæ and luminous ova of the glow-worm, *Lampyrus noctiluca*. MITE ON BUTTERFLY.—Mr. Clark, on behalf of Mr. Gadge, a specimen of a species of mite found at Ventnor on a specimen of *Melanargia galathea*. It was a species of the genus *Trembidium*. A FOODPLANT OF CUCULLIA VERBASCI.—Mr. B. H. Smith reported the larvæ of *Cucullia verbasci* found feeding on *Budleya variabilis*. EXOTIC SATYRINES.—Mr. Edwards, a box of exotic Satyrines including *Neorina crishna* from Java, and several species of the genus *Citherias* from Central America. FOODPLANT OF ZEUZERA PYRINA.—Mr. Sich reported finding a larva of *Zeuzera pyrina* (*aesculi*) attacking jasmine. August 11th, 1910.—OVA OF ACIDALIA STRAMINATA IN SITU.—Mr. Carr exhibited the ova of *Acidalia straminata* from Oxshott on heather. LATE SALLOW-BLOOM. EGGS OF EUPITHECIA SUBUMBATA.—Mr. Sich, sawfly-catkens met with during the past week at Eastbourne, and ova of *Eupithecia subumbata* laid on leaves of yarrow. ADOPEA FLAVA ATTACKED BY MITES.—Mr. Rayward, a specimen of *Adopaea flava* (*linea*) in a moribund condition from being attacked by no fewer than 21 mites. OVA OF EMERALDS.—He also showed the eggshells of *Phorodesma smaragdaria* and *Geometra vernaria*, and made comparison of the surface structure and the method of oviposition. COLEOPTERA AND HEMIPTERA ATTACKED BY MITES.—Mr. West (Greenwich), specimens of Coleoptera and Hemiptera recently met with by him attacked by mites. PIERIDS FROM NORTH AMERICA.—Mr. R. Adkin, a number of "White Butterflies" from North America sent him by Mr. Lachlan Gibb, including a series of the introduced *Pieris rapae*, a series of *P. oleracea*, and three specimens taken near Lost River, Canada, in May last, about which comment and opinion were requested. COLEOPHORA SILENELLA ? BRED.—Mr. Turner, a short series of *Coleophora silenella* (?) bred from the heads of wild sweet-william sent him by Dr. Chapman from the South of France. WASP'S NEST.—He also exhibited the nest of a species of *Polistes* wasp, found at Zermatt in July, 1909, suspended in a bush of alpine rose (*Rhododendron*). ANTHROCERA VICIE AB. CONFUSA, STAUD.—Captain Cardew, an extremely fine confluent example of *Anthrocera viciae* (*meliloti*), taken in July in the New Forest. A detailed account of this will be found in *A Natural History of the British Lepidoptera*, i., p. 458. ALGERIAN EPINEPHELE JURINA.—Mr. A. E. Gibbs, a series of *Epinephele jurina* from Algeria, having the ♀s of the extremely large and bright form ab. *fortunata*. EXOTIC SATYRINES.—Mr. Edwards, a box of Satyrines including a series of the extremely dimorphic species *Heteronympha merope* from Australia. LIVING MYMARIDS.—Mr. Enoch, living specimens of the egg-parasites, *Mymaridae*, taken in Richmond Park.



Another British example of *Xylophasia zollikoferi*.

By J. W. TUTT, F.E.S.

Probably one of the most elusive of the Noctuids occasionally captured in Britain is *Xylophasia zollikoferi*. Up to date only some four specimens have been captured in Britain, full details concerning the first two of which were published in *The British Noctuae and their Varieties*, vol. i., pp. 71 *et seq.*, whilst a third was noted as captured by Lofthouse at Linthorpe, near Middlesborough, on September 26th, 1903 (*Naturalist*, p. 456; *Ent. Rec.*, xv., p. 845; *Ent. Rec.*, xvi., p. 24). This last was figured by Barrett (*Lep. Brit. Isles*, pl. 424, fig. 5), and has more the appearance in figure of *Nonagria arundinis* (*typhae*) than the species it is intended to represent, owing to the width of the wing on the outer margin. Lofthouse, in recording his specimen, states that "he sugared in his garden throughout the autumn, and on September 26th captured a large Noctuid, which has proved to be *Xylophasia zollikoferi*, particularly worthy of note as having been taken at the time that large numbers of *Pyrameis cardui* was noticed all along the coast here from Redcar to Sunderland." So far as this is a suggestion that *X. zollikoferi* is an occasional immigrant, which appears to be absolutely certain, the reference to *P. cardui* is weak, as the latter immigrates here in May and June, and the autumn specimens are no doubt home-bred from immigrating parents.

The earliest example was captured by Harding, at Deal, in October, 1867, the second by Tait, at Inverurie, a few miles from Aberdeen, in September, 1871. The former specimen is in the "Doubleday coll.," at the Bethnal Green Museum, whilst the latter was, when *The British Noctuae and their Varieties*, vol. i., was published, still in Tait's possession. The first was commented on by Doubleday (into whose possession it passed) (see *Brit. Noct.*, i., p. 71), the second by Buchanan-White (*Scot. Nat.*, i., pp. 267-8, and quoted in *Brit. Noct.*, i., p. 71). Freyer, in his *Neuere Beitrage*, etc., pl. 184, figs. 1-2, figured and described the species in 1836, and it was then figured by Herrich-Schäffer (*Schmett. v. Europa*, figs. 103-104). These figures of Continental examples are all rather different from Harding's and Tate's examples which we described as *ab. pallida* (see *Brit. Noct.*, i., p. 72), and Buchanan-White notes (*Scot. Nat.*, i., p. 268) that Herrich-Schäffer's fig. 103 is more like the Inverurie specimen (*i.e.*, our *ab. pallida*), and further observes that H.-Schäffer's fig. 104 looks almost like a different species. This latter has quite a different appearance, though a similar facies, being strongly marked with black longitudinally in the discal area of the wing, and hence having quite a lineated appearance.

Recently Mr. A. Plunkett, of Norwich, asked me to name a Noctuid that he could not place, and sent the specimen through Mr. H. J. Turner for this purpose. As soon as I saw it I recognised it as another example of *X. zollikoferi*. The specimen was captured on September 4th, 1905, at Carrow, near Norwich, considerably worn, but superficially not at all unlike Herrich-Schäffer's fig. 104, the discal area is dark (had probably been blackish-grey) on which the nervures and outlines of the reniform and orbicular stand out in the pale, somewhat fawn, ground colour, the outer margin is also strongly shaded with

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dark grey, as well as the cuneiform marks; the hindwings nearly white with a grey outer marginal band, and grey discoidal. The specimen appears to be a ♀. It is a pity that one of the British examples has not been risked for eggs as we believe the life-history of the species is quite unknown.

Mr. Plunkett writes (September 27th, 1910) concerning his capture, "I took the moth at light, it was sitting quietly under a large electric lamp fixed on the corner of a building, at rest on the brickwork about 12 feet from the ground; I have curiously taken *Nonagria arundinis* (*typhae*) at the same place before and since, the locality, however, is only about 50 yards from the bank of the Wensum, and open meadow land and marshes extend quite to Yarmouth. When the specimen was pushed off the wall it was skittish, and flew several yards before alighting on the ground, a habit very different from that of *N. arundinis*, which, being disturbed under similar conditions, drops down like a stone. This really was the first reason I had for suspecting the insect was not *N. arundinis*."

There are only five examples (all ♂s) in the British Museum coll., all quite pale in form, and with the exception of the dark shading in the lower part of the discoidal cell, practically without any darker markings. These are labelled "Hungary," "Sarepta (Christoph)" (two), "Kurusch (Christoph)," and "Tura (1903)." Herrich-Schäffer's fig. 104 represents a ♀; Mr. Plunkett's example also appears to be a ♀. One wonders whether the dark *striata* form is confined to the latter sex. But Herrich-Schäffer's figure shows quite a red tint (*rufescens*) lacking altogether in Mr. Plunkett's specimen.

Rebel (*Berge's Schmett.*, 9th ed., p. 195) says that it flies in Middle Europe in September and October is "very rare near Berlin, Dresden, Chur (Switzerland), Chodan (Bohemia), Lemberg (Galicia), also occurs in Hungary, England, and the Ural district, more common in Central Asia." He adds that "Nothing is known of the early stages." Staudinger gives as its distribution: "Berolinum (2), Helvetia (1), Anglia (2), Halicia (1), Hungaria, Ural, Tura oc., Korla, Kaschgar."

### Notes on Micro-Lepidoptera of South-west London.

By ALFRED SICH, F.E.S.

Though it is not yet quite the fashion to collect the Tineina, I am glad to find that several entomologists do take an interest in these small insects, and keep those they happen to capture. This looks hopeful, and, perhaps, in time, we shall have quite a good number interested in this group, instead of about two dozen as at present. This season, 1910, has been too cold and sunless for the tastes of the Tineina, yet the few bright days have yielded some interesting species. In Chiswick, on April 21st, I noticed the larvæ of *Bucculatrix cristatella* were feeding, in their last stadium, on *Achillea millefolium*. Later I had the pleasure of watching one larva spin its peculiar cocoon. Two cases of *Coleophora albitarsella* were found, May 11th, on *Nepeta glechoma*, as usual among nettles. I have never yet succeeded in gathering these cases without stinging my hands. In the third week in May *Nepticula pygmaeella* and *N. ignobilella* appeared among the hawthorns. On June 16th *Ornix guttea* was seen at rest on an apple trunk. A few days later I took two *Argyresthia brockeella*. It is



strange that I have never before taken this very common species in Chiswick. A specimen of *Nepticula centifoliella* was bred from rose, July 8th. This species is now more common than *N. anomalella*. During this month *Gelechia rhomboidella* appeared, but more sparingly than usual. It is very easy to pass over this species as it creeps into the crevices of the bark of apples. I have frequently found it by seeing the tip of one wing only, all the rest of the insect being hidden from view. On August 1st I took a cocoon of *Ornix betulæ* off birch, and one of *Nepticula vimineticola* from a narrow-leaved willow, this cocoon was spun up on the very tip of the leaf. Both insects emerged the next morning! It was also pleasing to breed *Lithocolletis spinicolella* from Chiswick, as I had not before taken it on the Middlesex side of the river. (See *Ent. Record*, vol. xxi., p. 86.)

In Richmond and the surrounding parishes the following species occurred: *Lithocolletis stettinensis* off alders, and the little green larvæ of *Cedestis farinatella* in the needles of Scotch pine on May 23rd. On June 3rd *Coleophora albicosta* was common on furze, but slightly worn, and the larvæ of *Depressaria costosa* fell from the same plant. On one of the few oak palings still existing, *Prays curtisellus* and its var. *rustica* was common and in good condition, June 14th, and one *Elachista albifrontella* was taken among grass. A fortnight later *E. triatomea* occurred. One *Tinea corticella* was taken, July 15th, off an oak-trunk. On August 31st I found several cases of a *Coleophora*, very like the cases of *C. paripennella*, attached to the underside of the leaves of *Potentilla tormentilla*. I fancy there can be little doubt that they will prove to be cases of *C. potentillæ* if they are successfully reared. Off the above-mentioned palings one *Stenolechia gemmella* was taken. On September 6th I went to Ealing to get some cases of *Coleophora paripennella* to compare with the above-mentioned cases, and found also *C. sicifolia*. The whitethorn hedges were much discoloured with the mines of *Cemiosoma scitella*.

### A few days amongst the Lepidoptera of Caithness.

By DOROTHY J. JACKSON.

Caithness does not appear to possess a very varied lepidopterous fauna, but nevertheless great interest is attached, not only to those species whose favourite haunts are the wild moors and rocky coasts of the far north, but also to those others, which, spreading northwards, have established themselves firmly where the least encouragement is given them, be it in a hawthorn hedge or a group of storm-bent trees.

This year—1910—I was fortunate in spending a few days of continual sunshine—from August 22nd to 26th—collecting in this interesting county, devoting most of my time to the seacoast and the few far-distant woods. The high cliffs which, in most places, border this flat expanse of country, are provokingly inaccessible, and only in a few parts can descent be made with safety. There was just such a place at Whaligoe, a little fishing-village about eight miles southwest of Wick, and here amongst masses of knapweed and long grass *Epinephela janira*, and even *Polyommatus icarus*, in worn condition, abounded. *Eubolia mensuraria* rose up from the herbage on one's approach, and a specimen of *Cidaria fulvata* was also noticed. Collecting on the cliffs at Noss Head produced but a small variety of

insects, such as *Sericoris littoralis*, *Plutella cruciferarum* and *P. annulatella*, and a specimen in good condition of *Scoparia angustea*, resting on a grassy bank in a cleft in the perpendicular wall of rock.

Dotted over the otherwise uninterrupted surface of the tableland, clumps of trees stand out, sheltering, as a rule, some farm-house from the prevalent northerly winds, which have bent many a tree-top and stunted much of the foliage. The largest wood in the north of the county, planted about 80 years ago, is to be found near Stirkoke, three miles from Wick. Here a miscellaneous collection of such deciduous trees as alder, birch, oak, ash, mountain-ash, hazel, and willow, struggle upwards to the light, overshadowed by tall spruce firs, whose lower branches are dead and decaying. All are more or less smothered with lichen, for the ground in parts is swampy, the drains being choked up by the spreading roots of the trees. Here from almost every bush *Paedisca solandriana* was beaten, the most prevalent variety being of a dark reddish-brown ground colour, mottled with whitish-brown, excepting on the edge of the otherwise undefined dorsal patch. Two specimens only of the pale whitish-grey form with purple-brown dorsal blotch were taken, and one of a pale ochreous ground colour with a few dark chestnut-brown markings, somewhat resembling var. *trapezina*. Next in abundance to *P. solandriana* came *Cidaria immanata*, the specimens having the central band varying from dark grey, dusted with white, to black or brownish-black, the portion beyond rich chestnut-brown and the apical region similar in colour to the central band, the different colours beautifully separated by slender white transverse lines. Other species noticed were *Sciaphila virgaureana*, beaten from bushes, and *Argyresthia conjugella* from mountain-ash.

There is very little natural wood in the north of Caithness, but here and there some bushes may be seen by the sheltered bank of a stream; and one such place—the Camster burn—affords a most interesting collecting ground. From the moors in the centre of the county the burn flows between heather banks until, about eight miles from the sea, it passes through a small valley, which is densely covered with such bushes as willow, birch, hazel and aspen. On a closer inspection the birch bushes in particular were seen to be almost defoliated, and all the leaves that remained were crumpled, brown, eaten, and silkspun. The cause was evident on using the beating-stick, when, from the apparently lifeless bushes, a positive shower of moths came forth, filling the air for a few minutes with their fluttering forms and then settling once more on the bushes or the rocks. Chief amongst these was *Paedisca solandriana*, exhibiting great variety in colour and markings, var. *sinuata* being present, in addition to those varieties taken in the Stirkoke wood, and also one interesting form with a pale longitudinal streak extending through the middle of the wing from the base almost to the termen, and cutting up the ordinary markings. One specimen—a ♀—has the forewings of a rich dark brown, the only marking being this longitudinal streak in a deep ochreous colour. *Ephippiphora similana* also abounded, the specimens being rather small, and a few *Cerostoma costella* and *Argyresthia retinella* had successfully struggled as larvæ for their share of the birch leaves which now the larvæ of *Demas coryli* were finishing. From bank, bush and rock *Cidaria immanata* arose, all of the dark, handsome aberration described above, and *Hypsipetes sordidata* was also common,



no particular aberration being predominant, and the colour ranging from the palest sea-green, with a few dark interrupted transverse lines to an almost unicolorous brownish-black. From the willow bushes, *Hypermeia cruciana* (*angustana*) and *Rhacodia caudana* were beaten, the latter having a light brownish-grey ground colour strigulated with red or purplish-black. The aspen trees alone appeared lifeless, producing only a larva of *Leiocampa dictæa*; *Paedisca ophthalmicana*, which I have taken here commonly in September, not being yet on the wing, and not a specimen of *Tachyptilia populella*, which is so abundant in Ross-shire, being seen. From a rose-bush *Dictyopteryx bergmanniana* was beaten, and in a hawthorn hedge away from the burn *Argyresthia nitidella* abounded.

Another day I visited a deep gully near Lybster, through which the Riesgill burn rushes to the sea a quarter of a mile below. Its high steep banks, unlike those of the Camster, are clothed with luxuriant herbage, yet the same bushes of hazel, birch, and willow, flourish here, unhindered by the winds which sweep across the valley of the higher burn. Despite the greater shelter, the Riesgill valley contained nothing like the same profusion of moths, only one specimen of *Paedisca solandriana* being seen, and not even one of *Ephippiphora similana*. From the dark steep rocks at the water's edge, and from the overhanging bushes and tufts of grass, *Hypsipetes sordidata*, *Larentia olivata*, and *Cidaria immanata* were beaten, and amongst the low-growing herbage *Larentia didymata* and *Scopula lutealis* abounded. A specimen of *Adkinia bipunctidactyla* was also taken.

Such are the more interesting species observed, and though I can record no rarities amongst them, the examples to be found of distribution and variation would well reward a more lengthy visit to this northern part.

### Virachola (Hypolycæna) livia, Klug—A Syrian Insect.

By PHILIP P. GRAVES.

While examining a collection of insects made mostly near Beirût, by Sig. F. Cremona, I was asked by that gentleman to identify a ♀ Lycænid which he had taken near that town this year. It proved to be a ♀ of *Virachola livia*. On September 16th this year I visited two localities near the town where *Acacia farnesiana*, the food-plant of *V. livia* in Egypt, grows, and obtained a number of pods containing larvæ of this beautiful butterfly. I moreover caught a large and fairly fresh ♀ of *V. livia*, which was ovipositing on pods and flower-buds of the *Acacia*.

Neither Zach, who collected at Beirût in the forties, nor any other collector has, to the best of my knowledge, reported the presence in Syria of this interesting African species. The question now arises—has *V. livia* been introduced into Beirût by human agency, or is it a species of African origin, but long established in Syria, as are *Oastalius jesous*, *Hypolimnas misippus*, *Danaus chrysippus*, and other species which occur near Beirût and in other hot localities in Syria? The discovery of *V. livia* at points intermediate between Beirût and the Nile Valley would certainly strengthen the latter hypothesis, and I venture to hope that naturalists who may hereafter visit the Jordan Valley or the plain of Esdraelon will look out for the butterfly wherever “fitneh” (*A. farnesiana*) grows. As for the theory of recent introduction by human

agency, I may say that the pods of *A. farnesiana*, on which *V. livia* deposits its ova, and inside which the larva feeds and often pupates, were at one time much used in Egypt for the tanning of the native soft leather. Owing to the decline of the industry, the use of other tanning materials, etc., they are seldom used now for this purpose, but it is quite conceivable that pods containing larvæ or pupæ may have been imported in recent years into Syria from Egypt. The sweet, and to our noses, cloying scent of the flowers of *A. farnesiana*, makes it a favourite tree in Syria. It grows in a semi-wild state about Beirût, and is cultivated in many gardens in the town. With plenty of its foodplant in easy reach, and a climate warmer than that of Alexandria, *V. livia* should find no difficulty in establishing itself at Beirût. So much for these two theories. Should the first prove correct, I should expect to see *Castalius jesous*, the larva of which (I am informed) feeds on the same foodplant, give ground before *V. livia* at Beirût (assuming the latter to have established itself). The voracity with which one larva of *V. livia* will devour another in the same pod, notably when the victim has fixed itself for pupation, has always seemed to me to explain the rarity of *Castalius ubaldus*, a near ally of *C. jesous*, in Egypt. I have only twice seen this little "blue" at Cairo, and have but one specimen, a worn ♀ taken in November, 1907, while ovipositing on the acacia. One more point and I have done. I stated some time ago in the *Ent. Record* that I believed that the ants which attend the larva of *V. livia* devoured its frass. I have seen them pick up pieces thereof and carry them in their mandibles. But at Beirût, I was lucky enough to catch an ant in the act of "stroking" a larva of *V. livia* with its antennæ, which would suggest that the larva possesses the eversible gland found in so many Lycænid caterpillars.

### A few notes on the life-history of *Cucullia lucifuga*.

By P. A. H. MUSCHAMP, F.E.S.

Judging from the literature at my disposal, the life-history of *Cucullia lucifuga* seems to be little known, and what information I have managed to gather has proved wonderfully incorrect. Unfortunately I did not think of hunting up this information until to-day and it is now too late to enlarge upon the few notes I jotted down on my breeding-box. They will, however, prove, I hope, more useful and rather more interesting than the delightful "caterpillar-is-green-and-feeds-on-cabbage" style of description given by Seitz, Spuler, Berge and Co. I will give my notes exactly as I find them jotted down on the paper attached to my breeding-box, notes, which, to my inexperience, seem rather wonderful and decidedly instructive.

On June 27th a *Cucullia lucifuga* flew in through my study window, and, after hanging about the room in an orthodox manner, settled on my writing-table. I boxed it, because there happened to be chipboxes lying on the table; and put it on one side with the intention of looking at it the next day. On the 28th I was too busy to open the box and did not find time to do so till the afternoon of the 29th, when, to my no small surprise, I found 22 promising young larvæ waiting to be fed and their worthy mother still alive in the midst of her descendants. Trusting to their appetites I gave them a piece of dandelion leaf which they promptly attacked with great vigour and execution. The next



day the upper surface of the leaf was completely eaten away and the mother was dead. I have, unfortunately, very little time for breeding insects, but as there is plenty of dandelion to be found in our badly weeded garden I decided that I was by duty bound to help these poor hungry orphans out of their difficulties. The little fellows grew rapidly, and, after three days of chipbox existence, I had to hunt up one of my old breeding-boxes to avoid overcrowding. Their larval life lasted only fifteen days and they fed the whole time right royally. The young larva is of a coal-black colour; its dorsal and spiracular bands are of a pale yellow, thickening at regular intervals into orange-yellow patches; the orange-yellow patches look as if they had been painted first and then covered up with a pale yellow band, rather smudging the original work. On the spiracular bands the orange spotting is only half as thick as on the dorsal, only one spot to each segment; each segment of the spiracular has also three setiferous tubercles, set like a triangle. Anything more unlike the young larva of this species than the one represented as such by Spuler (Tafel xxxiii., fig. 18b) it is hard to imagine. At the last moult, the larva gets rid of its skin in the usual manner of the Cucullid larvæ; the head grows very pale and then transparent, the insect stays motionless for a couple of hours, then the head splits down the centre and the larva worms its way slowly out. The new skin presents exactly the same appearance as the one it has just got rid of, which also closely resembles the preceding skins; it is naturally directly after the moult rather paler, the black is palish brown-black, the yellow spiracular and dorsal bands are, however, just the same as before moulting, the head is of a pale auburn. The larva then remains still and after about an hour has got the normal coat of the preceding instar. Then, as a rule, it moves about a bit, but does not eat, and, finally, takes up a fresh position with the segments well lumped up together and the colour of its last coat proceeds very slowly to change. First a little bluish-grey begins to dust itself into the pigment of the spiracular and dorsal bands; this deepens very slowly, but regularly, the orange-yellow patches take a deeper orange tint and, after about two hours, the larva I specially note has little to show that there had ever been broad yellow bands; where the bands once were is now a trifle paler than the rest of the skin, which is now coal-black, the orange patches are very bright and the setiferous tubercles are just barely visible. An hour later the transformation is complete, the larva is now of a rich black colour with, from the 1st to the 8th abdominal segments inclusive, a dorsal row of orange spots, two to each segment, and a spiracular row, one to each segment. The first segment (prothorax) has one (two combined) triangular orange blotch spiracularly and three (first two separated only by fold) dorsally and on the second and third segments (meso- and metathorax) there are two orange blotches spiracularly and three dorsally; on the two last (13th and 14th) segments the dorsal orange blotches run together and form a continuous line.

One abnormal larva had a curious deformation of the 3rd abdominal segment, on which the dorsal band was broken and turned off at right angles laterally right and left, the bands thrown off laterally being of the same dimensions as the normal dorsal band contained by one segment; these lateral bands in order to find room had pushed back the

spiracular bands out of their places so that the latter invaded in their turn the prolegs. The larva moved about awkwardly like an animal with a crooked spine, the 3rd abdominal segment being slightly swollen. I first noticed this abnormal larva during the second instar and naturally expected that it would die; it, however, successfully went through all the changes, although always retaining its awkward wobbling gait, and in due time pupated. This abnormal larva has, quite unexpectedly, produced an externally normal moth.

The larvæ pupated in the frass and broken off dandelion leaves. After finishing their cocoons, made by attaching together the refuse with a light web of silk, they remained quiescent at least eight days before metamorphosis.

After seven days in the pupal form the first two of them emerged and they have now, August 2nd, all become moths.\* As the only authorities to whom I could refer speak of the species as passing a considerable length of time in the pupal stage, I felt rather puzzled; even for a species with only one brood the transformations appeared very rapid, but I understand from Mr. Blachier that Guenée notes (*Noct.*, ii., p. 144) the species as common in the Alps in May and August, and Berce (*Lep. France*, iv., p. 120) the species as double-brooded, occurring in June and August. In conclusion, I venture to express the hope that Monsieur Culot will give us a good figure of the larvæ of this moth when he reaches this stage of his present publication, for the figures to be found in the popular *picture books* might just as well be the larva of any other Cucullid as that of my interesting friend, *C. lucifuga*.

The moth seems to merit its name, for, although the parent rushed into my room so rashly a month ago, the examples I have bred will make no movement in the daylight, hide themselves in the old dandelion leaves that served as their last meal, and when I open the box make no attempt to escape. One that I threw up into the air did not try to make off by the open windows but just dropped down into a corner of the room.

Yesterday, September 28th, I picked up on the road in the middle of the village a full grown larva of *C. lucifuga*, which is now spinning up.

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### The First International Congress of Entomology at Brussels.

The first International Congress of Entomology was held at Brussels from August 1st to 6th, and was a great success in every way. The beautiful weather that was experienced the whole time made the visit most enjoyable. The gay and bright city of Brussels crammed with people, its streets teeming with life all day and a greater part of the night, when the principal parts were brilliantly illuminated, and the fine exhibition, all helped to make our stay there a most enjoyable one.

All the meetings of the Congress for business were held in the exhibition itself (fortunately the disastrous fire did not occur till after we left Brussels), and the members of the Congress were given free passes.

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\* Spuler says: "Die Raupe lebt im Juli, August an Milchdistel. . . . Die Puppen überwintern, manchmal zweimal."



It was pleasant to notice that Great Britain was so well represented, having the largest number of members. On the evening of July 31st a reception was given to members of the Congress by the Entomological Society of Brussels; this was very well attended, and it was a great pleasure to make the personal acquaintance of so many entomologists from all parts of the world whom one had only known by correspondence heretofore.

The papers read at the meetings were of great importance, being of a high standard and of much interest. In this direction also our countrymen took their full share. It is impossible to cite all the papers read in this notice, but mention may be made of a few of them.

Mr. R. Blanchard, a first-class speaker, at the conference on Medical Entomology, gave an excellent account of Sleeping Sickness, Malarial fever, etc. Rev. Père E. Wasmann, the great authority on the subject, gave a very interesting paper (with lantern) on "Ants and some of their Guests." Mr. W. Schaus read a paper entitled "A quoi sert le Mimétisme?" taking as the basis of his argument the following *résumé*—

"Les lois de la nature et de l'évolution. Observations faites pendant de longues années dans les forêts de la région néo-tropicale. Les oiseaux n'attaquent que rarement les papillons diurnes, qui n'ont pas besoin de se parer de couleurs protectrices."

The lecture, by a master, who has spent a vast time in the tropical forests of America, was bound to attract attention. It seemed to us that, in the discussion which followed, the supporters of "Mimicry" had far the better of the argument, both Prof. E. B. Poulton and Mr. G. H. Marshall discussing closely the "Mimicry" side. Mr. A. Handlirsch gave a very fine lantern lecture on "fossil insects" illustrated by many excellent slides. Papers were read by the following of our countrymen:—Messrs. R. S. Bagnall, G. H. Carpenter, F. A. Dixey, H. St. J. Donisthorpe, R. S. MacDougall, F. Merrifield, Sir Daniel Morris, Messrs. E. B. Poulton, R. C. Punnett, and F. Theobald.

The resolutions relating to Nomenclature and passed by the Congress, read as follows:—

1. It is desirable that the international rules of zoological nomenclature be followed equally by entomology as far as they are adapted to the requirements of this science.

2. It is desirable that descriptions be, as far as possible, accompanied by figures.

3. The names of authors ought to be written, as far as possible, in full. The Committee on Entomological Nomenclature is instructed to draw up, for the next Congress, a list of abbreviations of authors' names.

4. Descriptions which are published only in dealers' catalogues and in newspapers, are to be disregarded (without retro-active effect).

5. The Committee on Entomological Nomenclature is instructed to prepare, for the next Congress, a list of names of genera, species and varieties, whose orthography it is desirable to correct.

6. It is highly desirable that entomological publications bear the exact date of their publication. The Permanent International Committee is instructed to make known this resolution of the Congress to all the publishers and editors of entomological publications.

7. Entomology adopts the law of priority, without exception, for the names of genera, species and varieties. The starting point of nomenclature is the tenth edition of *Systema Naturae* of Linné (1758).

8. The nomenclature section of the first International Congress of Entomology considers as being of the greatest importance that a new clause be added to the international rules of zoological nomenclature providing that, at the time of description of a new species or new variety, one example only should be labelled as "type," the other examples examined by the author at the same time as "co-types."

Excursions were made to the battlefield of Waterloo, the Congo-Museum, etc., etc. On the occasion of the visit to the Brussels Natural History Museum all those present were photographed; the result is a very good picture of the group.

The next Entomological Congress is to be held at Oxford in two years' time, when we hope to meet all our friends again.

Considerable thanks are due to Mr. Auguste Lameere, president of the Congress, Mr. G. Severin, chief secretary, whose kindness and courtesy to all was much appreciated, and to Dr. K. Jordan and Dr. Malcolm Burr, the promoter and indefatigable International Secretary, respectively, to whose untiring energy and support much of the success of the Congress is due. A good general account of the Congress may be found in *The Times* of August 10th. We hope to deal with the more strictly entomological papers, which at present have received no attention whatever in the reports, when the volume of *Proceedings* comes to hand. The following is a list of the members assisting at the Congress (an \* represents Life-Members):—Messrs. Andres, A., Alexandria; Arrow, G. J., London; Assmuth, J., Berlin; Bachmetjew, P., Sophia; Bagnall, R. S., Peshaw; Ball, F., Bruxelles; Becker, Th., Liegnitz; Bivort, A., Fleurus; Blanchard, R., Paris; Bondroit, Bruxelles; Boone, A., Turnhout; Bourgeois, J., Ste.-Marie-aux-Mines; Bouvier, E. L., Paris; Braem, R., Bruxelles; \*Burr, Malcolm, Eastry; von Buttel-Reepen, H., Oldenbourg; \*Candèze, L., Liège; Carpenter, G. H., Dublin; Champion, G. C., London; Clavareau, H., Bruxelles; de Crombrughe de Picquendaele (baron G.), Bruxelles; Crahay, N. I., Bruxelles; Dampf, A., Koenigsberg; Desguin, E., Anvers; Desneux, J., Bruxelles; Dewitz, J., Metz; Dixey, F. A., Oxford; de Dobbeleer, F., Frasnes; Doderò, A., Gênes; Donisthorpe, H., London; Dupuis, F., Bruxelles; Eltringham, H., Oxford; Encobet, J. Arias, Madrid; Engels, Ch., Bruxelles; Everts, Jonkheer Ed., La Haye; Ferrant, V., Luxembourg; Forel, A., Yverne; Gahan, C., London; Garcia y Mercet, R., Madrid; Geddoelst, L., Bruxelles; Gillanders, A. J., Alnwick; Goetgebuhr, Gand; Goffart, L., Bruxelles; Gounelle, E. Paris; Guillaume, A., Bruxelles; Guillaume, F., Bruxelles; Handlirsch, A., Vienne; Hasebroek, K., Hambourg; Hastert, P., Luxembourg; de Hennin Boussu-Walcourt (Dom), Maredsous; de Hennin Boussu-Walcourt, Em., Bruxelles; Hepburn (Sir A. Buchan), London; Holdhaus, K., Vienne; Holland, W. J., Pittsburgh; Horn, W., Berlin; Horvath, G., Budapest; Howlett, J. M., Pusa; Imhof, O. E., Windisch; Jacqué, L., Bruxelles; Janet, A., Paris; Jones, A. H., London; \*Jordan, K., Tring; Joseph, Edw. G., Oxford; Junk, W., Berlin; Kerremans, Ch., Bruxelles; Kertész, K., Budapest; Klapálek, F., Prague; Kolbe, H., Berlin; Kosminski, P., Moscow; Künkel d'Herculais, J., Paris; Kuntze, A., Dresden; Lahille, F., Buenos Aires; Lameere, A., Bruxelles; Lesne, P., Paris; Longstaff, G. B., Putney Heath; Lyman, H. H., Montreal; MacDougall, R. S., Edinburgh; Magretti, P., Milan; Marchal, P., Paris; Marshall, Guy A. K., London; Martin, H., Bruxelles; Martin, R., Paris; Mayné, R., Bruxelles; Merrifield, F., Brighton; de Meijere, J. C. H., Amsterdam; de Moffarts (baron P.), Botassart; Morris (Sir Daniel), Boscombe; Navas, Longinos, Saragossa; d'Orchymont, Menin; Olivier, Ern., Moulins; Osborn, H., Columbus; Philippson, M., Bruxelles; Pirsoul, F., Namur; Poulton, E. B., Oxford; Punnett,



R. C., Cambridge; Reh, L., Hambourg; Renard, A., Liège; Riotte, C., Steyl; Ris, F., Rheinau; Roelofs, P. J., Anvers; von Rosen (Baron), Munich; \*Rothschild (Hon. N. C.), Tring; \*Rothschild (Hon. W.), Tring; Rowland-Brown, H., London; Saint Claire Deville, J. Capt., Epinal; Sasaki, Chujiro, Tokio; Schaus, W., London; Schenkling, S., Berlin; Schmiedeknecht, O., Blankenburg; Schnabl, J., Varsovie; Schouteden, H., Bruxelles; Schubert, K., Berlin; von Schulthess, A., Zurich; Schultz, A., Villefranche; Seeldrayers, E. Bruxelles; de Sélys-Longchamps (baron M.), Bruxelles; Seitz, A., Darmstadt; Severin, G., Bruxelles; Simon, E., Paris; Sjöstedt, Y., Stockholm; Skinner, H., Philadelphia; Smits van Burgst, La Haye; Solari, F., Gênes; Speiser, P., Sierakowitz; Steinmetz, F., Malines; Stringe, R., Königsberg; Sturgess, W. B., Gerrards Cross; Szilady, Z., Magy Enyed; Theobald, F., Wye; Trimen, R., Oxford; Tullgren, A., Experimentalfältet; Van Biervliet, J., Bruxelles; Van Dissel, E. D., Utrecht; Vaughan-Williams, R., London; Vermorel, V., Villefranche; Veth, H. J., La Haye; Villeneuve, J., Ramboillet; Wainwright, C. J., Handsworth; Meade-Waldo, C., London; Wasmann, E., Luxembourg; Willem V., Gand; Wytzman, P., Bruxelles.

LADIES.—Mesdames Ball, Burr, Donisthorpe, Doderò, Horn, Janet, Junk, Kertész, Kunckel d'Herculais, Kolbe, Lameere, Longstaff, Morris, Poulton, Rousseau, Saint Claire Deville, Schouteden, de Sélys, Severin, Speiser, Smits van Burgst, Trimen, Veth. Misses Brown, Bouvier, Engels, Forel, Kerremans, Le Lorrain, Merrifield, Poulton, Rowland-Brown, E. and M. Solari.

The number of supporters (Universities, Museums, Institutes, Societies) is 270, of which 24 are life members. The complete list will appear in the Proceedings of the Congress.—H. St. J. K. D.

### Notes on the Lepidoptera of Brindisi.

By JAMES A. SIMES.

If one may judge from the paucity of notes in entomological journals the far south of Italy is almost terra incognita to British entomologists; and as, during the last few years, business has carried me very many times to this region, it has occurred to me that some rough notes on its lepidoptera in so far as I have been able to observe them might not come amiss. On nearly every occasion the town of Brindisi, in the province of Lecce, has been my base and from it I have made short excursions in almost every direction.

The extreme south-east of Italy is one vast plain, raised very few feet above the sea-level. The rich red soil is extremely fertile and seems to be exceedingly favourable to vines, which are planted here in enormous numbers and cover huge areas. The few tracts that are not dedicated to Bacchus are planted with olives, apricots, peaches, oranges, lemons, maize, melons, fodder crops and vegetables; and, between the various plantations, run innumerable mule tracks, where the wild plants of the district struggle fiercely to maintain a footing. In one or two directions, large tracts of moorland are to be found where the *Lentiscus* and *Erica carnea* are the principal competitors; while along the coast and round the harbour mouth there are big areas of rough

unclaimed land covered with aromatic plants and shrubs of many species. This coast waste is my principal hunting-ground, and on it I have taken the bulk of the species referred to in the following notes, though, at times, when the fierce sun has burnt up the flowers and herbage of the wild I have been glad enough to make friends with the owners of gardens and seek my quarry amongst their flowers. Here let me say that, personally, I have found the natives of the south quite harmless, inoffensive folk with whom it is quite easy to get on; and I have made it my business to establish friendly relations with all the goatherds and muleteers whose work has brought them frequently into my hunting-grounds. This is an easy matter, for your southern Italian would almost sell his soul for tobacco; and the judicious distribution of a few cheap English cigarettes (purchased for the purpose before leaving England), will generally secure for you the good-will of all the *contadini* in the neighbourhood. If you also add to your entomological outfit a few cheap biscuits wherewith to propitiate the canine belongings of the aforesaid goatherds, you may wander at will over the Brindisine country-side without fear of difficulty or molestation, provided always you do not act rashly. Above all things one should remember never to strike a Southern Italian whatever the provocation. Personal violence is hotly resented; and I heard of one case where a box on the ear administered to a troublesome boy—who richly deserved what he got—very nearly had a tragic result, and had it not been that a boat was at hand in which the boy's chastiser made good his escape in the nick of time, he would undoubtedly have met his death at the hands of a band of infuriated peasants armed with scythes and mattocks. And there is also an unwritten law as to dogs. If these rush at you and make an unfriendly demonstration, you are free to act as the peasant would act, but you must do no more. The peasant would pick up as big a stone as he could find, and if the dog waited for him to regain the upright position the stone would be used as a missile—but the dog rarely waits for the stone. Most of them have learnt in early days that Brindisine peasants are uncommonly good shots, and Brindisine stones painfully hard, and they regard further demonstration of these ascertained facts as superfluous and unpleasant. If no stone is handy the mere pretence of picking one up will usually suffice.

It may be well to mention that a good working knowledge of Italian is necessary to a wanderer in Southern Italy. The peasants understand nothing else; while even in the towns it is rare to find a person—outside the Hotels and Consulates—who understands French. English and German are almost unknown tongues.

To judge from the surprise and curiosity evinced when I first took my walks abroad in this neighbourhood armed with a butterfly net an entomologist had never before been seen by the peasant folk. I well remember the little gathering of *contadini* who watched me from a respectful distance with absolute bewilderment stamped on their faces. "Ma, che fa qua?" asked two or three simultaneously of a grizzled old veteran, the doyen of the group. "Non so" replied the oracle, "è inglese!" What further explanation could be required? Without further preliminaries I will now pass on to the enumeration of the species of lepidoptera with which I have met.

*Papilio machaon* is of frequent occurrence from April to October



being most numerous in May when it is to be seen commonly at thistle and scabious blossoms. The examples tend to run larger than those at home but on the whole there is no marked variation. I have frequently found specimens at rest on the dry, inflated seed-heads of *Nigella*, which is a common weed throughout the district. The females will oviposit on the most stunted and unpromising plants of fennel, and the resultant larvæ may be found in every month from June to December. It was in the middle of December that I once found a very dark larva of this species in which the bright green ground colour had practically disappeared owing to the expansion of the black band on each segment. The orange spots were also much reduced in size.

*Iphiclides podalirius* is not on the wing so long as the last species. It appears in April and continues in varying numbers until September. The specimens are larger and paler than my Rhone valley examples and the tails are somewhat longer, though the difference is not very marked. When a male and female chance to meet they will often fly to a great altitude chasing one another till almost out of sight, and it is a fine sight to see them sail down from the height with motionless wings and tails trailing out behind like a swallow's. In my experience *P. machaon* rarely, if ever, glides with motionless wings. This species will often oviposit on a bush less than two feet in height. *Pieris brassicae* and *P. rapae* are met with the year round, but they vary greatly in numbers from year to year, especially the former. In 1907 *P. brassicae* was in enormous numbers from May until August, but a very large percentage of the larvæ found in the autumn months were "stung." Both species roost largely in the great clumps of a herbaceous yellow-flowered *Salvia* which is common in the lanes. The undersides of the leaves of these plants are nearly white and the Pierids deliberately seek them out for their roosting-places. *Pieris napi* I have never met with here and doubt very much whether it occurs. *Pontia daplidice* is to be met with from March to September and at times rivals *P. brassicae* and *P. rapae* in numbers, but it does not share their preference for the purple composite flowers, haunting instead the small inconspicuous blossoms of many species of *Labiatae* such as *Melissa*. The form *bellidice* is met with, but not frequently, the majority of the examples found being fine, large and well marked insects. *Colias edusa* is another of the species to be met with the year round, but it is most abundant in May and August. The Brindisi specimens are of a large size and well coloured, many of the males having a rich purple suffusion when fresh. The spring brood begins to appear very early in May in good years, and a week later the butterfly is everywhere, but is especially common on the rough ground at the mouth of the harbour. The ab. ♀ *helice* I have not met with. *C. edusa* commonly rests on the yellow leaves of a herbaceous *Senecio*, choosing its roost very carefully and seldom, if ever, settling down upon a leaf that does not "tone" with its own colours. *Gonepteryx cleopatra* is common from February onwards except for about eight weeks, viz., from the middle of April to the middle of June, at the end of which time the new brood appears. Ova and larvæ are to be found freely on the evergreen buckthorn but I have not yet succeeded in finding the pupa. This butterfly is especially fond of red flowers and I should think there can be few finer sights in Nature than that to be enjoyed at Brindisi on a fine day in June, when numbers of fresh ♂ *G. cleopatra*

are hovering round the large vermilion flowers of the pomegranate under the deep blue Mediterranean sky. The whole makes up a scene of almost tropical brilliance. *Gonepteryx rhamni* I have never seen here, and my reference to it on page 188, of vol. xv., of the *Ent. Rec.* was a *lapsus calami*. *Celastrina argiolus* is common in both broods. The males are more of a lilac tint than ours, and in the females of the second brood there is a strong tendency towards the disappearance of the blue coloration entirely, its place being taken by a dusky suffusion. *Polyommatus icarus* is distinctly scarce and I do not think I have come across a score of specimens all told. Several of the males taken are small, undersized insects, but otherwise my specimens would pass for our ordinary English form. This is not the case, however, with *Aricia astrarche*, which is nearly always of the var. *calida*, the orange spots being very pronounced. It is by no means an abundant insect here, but is much more frequent than *P. icarus*. *Scolitantides baton* I have taken once only and *Glaucopsyche cyllarus* only twice, one example in February and one in May. *Lampides boeticus* occurs in two broods—in May and August—and is to be met with in the neighbourhood of the Spanish broom, on which the larvæ feed. It is not common and is very capricious in its appearance, and it seems to get worn very quickly. Most of the examples which I have come across, both at Brindisi and in other parts of Italy, have been unfit for the cabinet. *Rumicia phlaeas* is more abundant than any of the "blues," and is found commonly in the grassy lanes. I have met with the type in the early spring, but a little later the ab. *cleus* is the only form to be found. The Argynnis are but poorly represented, owing, no doubt, to the absence of woodlands. *Issoria latona* occurs sparingly in the weedy lanes, and *Dryas pandora* in plantations and gardens. The latter species is on the wing as early as June 20th in a favourable year. A dark form of *Melitaea phoebe* is to be met with occasionally in the lanes, and *M. didyma*—a fine large form—on the rough ground at the harbour mouth. The females of this species are especially interesting and though many of those taken present a facies similar to that commonly met with in Switzerland (var. *alpina*), many more show not a trace of dark green, the ground colour of both fore- and hindwings being but little less bright than that of the males. To me, however, the striking feature about them is their size, for they look like giants against their kindred from the Alps. *Pyrameis atalanta* is occasionally met with in the neighbourhood of gardens but *P. cardui* is abundant everywhere, as, indeed, it ought to be, seeing that thistles of numberless species form a very large proportion of the flora of the neighbourhood. The fresh brood appears on the wing in the third week of May. *Polygonia egea* is not infrequent on the stone walls of the wine-presses and tool-houses dotted about the countryside, and my examples from Brindisi are considerably brighter in colour than those which I took at Grasse in the Alpes-Maritimes last year. *Epinephle janira* appears at the end of April and a fortnight later is very common. It is a fine and very large form which is met with here, the females being very brightly coloured and, in a large proportion of them, there are large fulvous areas on the hindwings. *E. ida* keeps more to the lanes than does its near relative *E. janira*, and, in these situations, it is very common from the middle of May to the end of June, though towards the end of its time it is scarcely recognisable. It is an insect that soon loses its freshness,



and a series required for the cabinet should be netted in the third week in May. *E. tithonus* I have not seen in Southern Italy. *Pararge megera* is to be found the year round in varying numbers—I have never failed to meet with it on one of my thirty odd visits ranging from the earliest days in January to the latest in December. The males are quite typical but the females are paler in ground colour and much less well marked than the females of the spring brood on the Riviera. The only form of *Coenonympha pamphilus* which I have met with is the ab. *lyllus*. *Satyrus fidia* is in great abundance on the rough ground near the harbour about the middle of August, and the same ground produces one or two other very interesting Satyrids, notably *Melanargia arge* which is I understand usually considered one of the most difficult of European butterflies to obtain. There is no difficulty about it at Brindisi if you get there at the right time and hit the right place, which is the rough ground by the side of the outer harbour between the P. and O. coal wharf and the signal station (Fort Amara). It is especially abundant towards the fort. Its habits are exceedingly like those of our familiar *M. galatea*. On a fine day in early May it is to be found in plenty at the blossoms of scabious and thistles and flitting up and down weedy banks; but if it is blowing scirocco, *M. arge* does not venture forth, and must then be searched for at rest. It is fond of roosting on a big rush, which grows in plenty in wet hollows and has points like bayonets; but it also rests on the stems of barley and rye in the adjoining fields, and on various low plants. About 4.30 p.m. it begins to seek its roost, and then the butterflies may be seen on the rush stems in scores, with wings half open to catch the late sunshine before finally settling down to sleep. Then, and a little later, is the time to get one's specimens. On May 9th last I examined over 400 in one evening, and found among them eight fine examples of the ab. *caeca*, Stdgr. On the following morning, about 11 a.m., I saw several pairs in copula, and I noticed that, when the paired couples were disturbed, the female carried the male. The lizards were taking toll of these paired insects, and several sets of detached wings showed where a tragedy had been enacted. The female of this species will often deposit its white spherical eggs on the cork of the collecting-box, just as *M. galatea* does. *M. arge* is widely distributed in the neighbourhood, and I have met with it miles away from the harbour, but the rough ground near Fort Amara seems to be its headquarters. *M. iapygia* also occurs on the same ground in some numbers, but I have not met with it in such plenty as *M. arge*. By the way, Spuler gives June and July for this insect, but, at Brindisi, the latter month would be much too late. *M. iapygia* appears about May 20th, and the majority of those taken three weeks later are scarcely worth pinning. *M. galatea* var. *procida* is abundant in the weedy lanes about the same time as *M. iapygia*, but it appears on the wing a little earlier. Amongst the Urbicolids the most interesting is *Gegenes nostradamus*, of which I have only managed to secure about eight or nine examples all told. The first one I took was a fine female which I noticed at rest on a thistle. I approached, and was surprised that the insect was so bold as to remain unmoved; but approaching still closer, I observed it was held fast in the callipers of a crab-spider, whose body was sunk deep in the capitulum of the thistle, while the callipers,

tinted purple like the flower, looked exactly like a couple of florets. These spiders are very common, and account for a goodly number of butterflies. Their normal colour is white, but they are capable of assuming the hue of almost any flower in a short time, and are thus enabled to trap any insect visitor to the flower. Three of my *nostradamus* were found thus entrapped, but, fortunately, they were quite suitable for cabinet purposes. *Erynnis alceas* is frequent from May to August, but by far the most abundant Urbicolid is *Thymelicus acteon*, which is to be met with in great plenty. Here it is really at home, and one may see little parties of ten and twenty together dashing about the lanes and vineyards at a great pace. In Italy the butterfly seems to be more or less gregarious in habit, and large numbers may be found together at dusk roosting on rye and barley stems or on grasses.

Amongst the Heterocera the most noticeable species is *Sesia stellarum*, which is in the greatest plenty, and is found in every month of the year. It is very fond of flying along walls in the hottest afternoon sunshine and of settling there to bask. The latter habit gives opportunities for the lizards and geckos which they are not slow to seize. *Phryxus livornica* is common in some seasons in June, and flies in the bright sunshine as well as at dusk. *Agrius convolvuli* is common in the same month over flowers at dusk, and I have netted several in the short Italian twilight at a single patch of flowers. *Coscinia striata* is common in May and June in the vicinity of barley and corn fields; and on the rough ground by the coast *Heliothis armigera* swarms at the same time at the flowers of *Melissa*, which are also beloved of *Acontia luctuosa*, *A. urania*, and *A. lucida*. The same ground produces *Emmelia trabealis*, *Rhodostrophia sicanaria*, as well as *Nemoria pulmentaria*, of which I took a female in May last, and obtained therefrom a batch of ova. The larvæ of this species are said by Spuler to feed on *Peucedanum*, *Bupleurum*, and other *Umbelliferae*, but, in the absence of these plants, I had to try them with other pabulum, and found that they fed up readily on southernwood ("old man"). The imagines bred from these ova appeared at the end of July. *Grammodes alpina* and *Leucanitis stolidia* are to be found in the weedy lanes, and occasionally a huge male *Saturnia pyri* flies in to light. Large forms of *Syntomis phegea* and *Anthrocera purpuralis* are to be taken near the harbour, and everywhere one meets with *Plusia gamma*. *Arctia villica* is common in early May, and is frequently disturbed during the day when one is working for butterflies. At such a time it will rise from the herbage and fly considerable distances before settling down again. Larvæ from ova laid on May 10th last, are now going into hybernation, not one of them having fed up this summer. I have not been able to induce them to eat anything since early in August. *Pachygasteria trifolii* is common in the larval state on low plants. I once came across about a dozen larvæ of a Noctuid feeding on Spanish broom which closely resembled the larva of our *Hadena pisi* in coloration, but were as big as fullgrown larvæ of *Mimas tiliaæ*. Unfortunately, owing to the vicissitudes of travel, they perished before I got back home, and I have never yet succeeded in finding out to what species they belonged.

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## Early Summer amongst the Butterflies of the Rhone Valley.

By JOHN ALDERSON.

(Continued from p. 210.)

June 5th was a most unfavourable day. Not once did the sun fully succeed in forcing its rays through the densely packed clouds that held possession of the sky, whilst cold drizzling showers fell at intervals. After lunch I made my way to the opposite bank of the Rhone in the direction of Lavey. Here, three days previously, odd examples of *Enodia hyperanthus* had been noted, but now the species was fully out, rising in numbers at every step one took. Naturally, the insect was in prime condition, and a very short time sufficed to obtain a good series. None of the more striking aberrations was observed, although there was a good deal of minor variation, consisting chiefly of the obsolescence of some of the usual spots on the underside of the wings. The capture of a newly-emerged *Melanargia galathea* added another species to my list, but apart from these species very little else was on the wing.

For some days I had been awaiting a favourable opportunity to go up to Caux, in order to see if I could find *Loweia* (*Chrysophanus*) *amphidamas* in its special haunt there; but as the days passed without bringing any improvement in the weather, I decided to wait no longer, and I made up my mind to go the following day and take my chance. The outlook was most unpromising when I left St. Maurice the next morning by an early train, and, on reaching Aigle, the rain pattered upon the windows of the train, the carriages of which were filled with a joyous crowd of Swiss singers making their way to Montreux to take part in the great musical festival. The rain had ceased by the time we reached Montreux, so I took the funicular railway to Glion, walking thence to Caux. The sun had not yet made an appearance, and the long grass hung heavy with raindrops, while on the slopes below a dense white mist was rolling slowly upwards, completely concealing the Lake of Geneva from view. Scattered specimens of *Cupido minimus* and *Polyommatus icarus* were found resting on grass stems by the roadside, but not a single insect was seen in flight. On reaching the *amphidamas* ground, I searched long and carefully in the hope of finding stray specimens of the species at rest, but, beyond stirring up one or two Geometers, my search was quite unsuccessful. Suddenly the sun burst through the clouds, and simultaneously a small butterfly darted amongst some herbage near the dry bed of the torrent. On sweeping the insect off the blossom on which it had alighted, I was very pleased to find I had captured my first specimen of *Loweia amphidamas*. By dint of working hard I managed to get a fair series during the brief intervals of sunshine, but, judging from the condition of the majority of the specimens captured, it was evident that the species had been out fully a fortnight. The sunny glades along the banks of the torrent were its favourite haunts, where it darted in and out amongst the rough herbage with a swift, jerky flight. *Brenthis euphrosyne* was not uncommon flying rapidly along the bed of the torrent, which was almost dried up, and occasional hibernated specimens of *Polygonia c-album* and *Pyrameis atalanta* were also noted. In the adjoining meadows *Erebia medusa* was on the wing, but it was very much worn.

*Agriades thetis* and *Aricia astrarche* were fairly common, whilst several specimens of the broad-bordered bee hawk moth, *Hemaris fuciformis*, were seen flying in the sunshine. At damp places along the footpath *Cupido minimus*, *Polyommatus icarus*, *Cyaniris semiargus*, *Hesperia malvae*, and *Powellia sao* were congregated, though not in any great numbers, and out of the group I picked a very nice specimen of *Cyclopides palaemon*, and one or two *Hesperia alveus*. Returning to Territet, I took the train to Villeneuve, and walked from there in the direction of Noville. In the marshes lying between Noville and the head of Lake Geneva, I found *Enodia hyperanthus* very common, and picked up a few specimens of *Melitaea athalia* and *M. dictynna*. Newly-emerged *Aglais urticae*, of a larger size than one gets in England, were flitting along the footpath, and their capture added another species to the list. I was very pleased also to get one or two very nice *Brenthis ino*, and might have got more had I stayed longer, but the mosquitos were as a horde of ravening wolves, so I left them in possession of the ground.

The morning of the following day, June 7th, opened very dull and cold, with a strong wind blowing. I went by train to Vernayaz, crossing over to the Branson side of the Rhone by the bridge near Vernayaz station, with the intention of working along this bank of the river to the *Collutea* patch at Branson, for I was anxious to try for *Lycaena iolas* in that well-known locality. In the absence of sunshine very few insects were on flight. *Plebeius argyrognomon* was not uncommon resting on the grass stems, and an undersized ♂ was taken, measuring 24mm., with nearly all the underside submedian spots obsolete, the remaining spots showing up very faintly owing to their being much reduced in size. Occasional specimens of *Agriades thetis*, *Cupido osiris* (*sebrus*), *Aricia astrarche* and *Loweia alciphron* var. *gordius* were disturbed. A single *Erynnis alceae* was picked up, and a few *Hesperia carthami* were observed. A search was made on the rock faces for stray pupæ, but only a cocoon of *Lasiocampa quercus* was found, spun up at the foot of the rock and well hidden by the long grass; from this cocoon a ♀ of this species emerged on July 6th. In addition, the search revealed a number of *Pararge maera* resting on the rocks. Here I first came across *Lycaena arion*, two ♂s being captured, flying over some rough stony slopes, and immediately afterwards I netted a specimen of *Ophiodes lunaris*, which was flitting along the footpath.

Parenthetically I may remark that an easier way to reach the *Collutea* patch is by the usual one across the meadows from Martigny station to Branson. I cannot recommend the route I followed. I had expected to find a footpath leading along the bank of the river as far as Branson, but in this I was disappointed, for, where a sharp spur of the Follaterres comes steeply down to the Rhone, the path disappeared. I found it somewhat exciting scrambling over the steep slopes, for, in this exposed quarter, the wind was blowing with the force of a hurricane. However, the little grove where the *Collutea* grows was safely reached, and the first insect seen flying about the bushes was a specimen of *Lycaena iolas*, which on netting was found to be a trifle worn. I spent some time in the grove, but the sun was very intermittent, and I saw no more *L. iolas*. Another species new to me was *Nordmannia* (*Thecla*) *ilicis*, four or five specimens in fine condition



being beaten out of the hazel and oak bushes. Crossing the fields to Martigny Station, I found very little by the way except occasional *Melanargia galathea* and *Colias hyale*. In the interval of waiting for the train, I strolled round La Batiaz, but nothing was seen except a few *Pararge maera* and *P. megaera*.

The following day brought no improvement in the weather, for the sky was packed with clouds and the temperature was low. After lunch I went by train to Bex, walking through the fields by the side of the railway to the Gryonne. In the meadows *Melanargia galathea* was in abundance, and I had no difficulty in getting a good series. The ♀s were far from common, and there was no variation to speak of. *Epinephele ianira* was now getting more abundant, and resting on the grass stems were several specimens of "blues," including *Agriades thetis*, *Polyommatus hylas*, and occasional *Aricia astrarche*. Near the Gryonne a few fresh *Melitaea athalia* were flying in the company of worn ♀s of *M. parthenie*. On some marshy ground near the banks of the Gryonne, *Coenonympha iphis*, in perfectly fresh condition, was added to the list. Here it was flying in fair numbers with *C. pamphilus*; but I had only time to take one or two specimens of *C. iphis* before the rain came down in so steady and determined a manner as to put collecting out of the question for the remainder of the day.

(To be continued.)

## NOTES ON LIFE-HISTORIES, LARVÆ, &c.

NOTE ON NEW FOODPLANT OF *PAPILIO MACHAON*.—The *Papilio machaon* ♀s in my butterfly-house this summer readily deposited their ova on some plants of *Aegle sepiaria* (*Citrus trifoliata*) which I have grown there, and the larvæ have fed up on this new pabulum, though much more slowly than on fennel or skimmia.—CECIL FLOERSHEIM, B.A., F.E.S., Pennyhill Park, Bagshot, Surrey.

## VARIATION.

ABERRATION OF *EUCHLOË CARDAMINES*.—I took this year, on June 2nd, an aberrant form of *Euchloë cardamines*, which I have not anywhere seen described. The species is usually so constant that this variation seems to be worth recording:

♂, of normal size. On the upperside hindwing, the upper margin of the central cell, and the upper four veins radiating from the cell to the margin of the wing, are all strongly marked with bright sulphur-yellow. This does not correspond with the yellow venation which seems to be normally present on the underside of the hindwing, for, on the underside, it appears along the greater part of the margin of the central cell, the basal portions of the radiating veins, and the two free veins near the dorsum. In the specimen here described, the yellow suffusion at the base of the forewing, underside, is perhaps slightly more strongly developed than is usual in English specimens.

If this form has not been previously described, I propose for it the name *ab. sulfureovenata*, suggested by Mr. Raynor.—G. L. KEYNES, 6, Harvey Road, Cambridge. September 18th, 1910.

THREE NEW ABERRATIONS OF *ABRAXAS GROSSULARIATA*.—As I am parting with all my best aberrations of *Abraxas grossulariata*, I take this opportunity of naming three striking forms which do not fall under any of my previously given varietal names. Within the last

twelvemonths I have bred several specimens of *ab. centralipuncta*, n.ab., a form of *flavofasciata* in which the costa, instead of having three black blotches, has only one, and that situated above the discal spot. The whole insect has thus a very light appearance, especially as the discal spot is, as a rule, strongly developed. A very striking form of *ab. lutea* has the hindwings pure white, and I decided to name this *ab. semilutea*, n.ab. Of this I have only reared five specimens. A very peculiar form of *A. grossulariata* has all the wings tinged with pale black, and may be aptly described as *ab. nigroincta*. Only two specimens of this have emerged in my breeding-rooms. All the three above-named forms are of Lancashire origin.—REV. G. H. RAYNOR, M.A., Hazeleigh Rectory, Maldon, Essex. *September 17th, 1910.*

### NOTES ON COLLECTING, Etc.

*AGRIUS CONVULVULI* AT NEW BRIGHTON.—I have recently had brought to me a specimen of *Agrius convolvuli*, which was captured in a house at New Brighton, near Liverpool, on August 29th. Having made enquiries locally, I find there appears to have been no other records of captures of this moth this year. Can you say if there have been any recorded captures in the south of England this year?—E. WATTS, Balmoral House, Stalybridge. *September 9th, 1910.* [We have heard of none. Perhaps our readers may know of some.—ED.]

BREEDING *TAPINOSTOLA EXTREMA* AND *T. HELLMANNI* FOR THE FIRST TIME.—I am glad to report that Mr. Todd and I have succeeded in breeding *Tapinostola extrema* and *T. hellmanni*. With the exception of a few minor details their life-histories are complete, and I hope shortly to publish the same. I believe it is the first time these species have been bred in this country.—H. M. EDELSTEN, F.E.S., Forty Hill, Enfield. *September 7th, 1910.*

*GASTROPACHA ILICIFOLIA* REPORTED FROM TAVISTOCK.—On Friday, September 2nd, I caught a female *Gastropacha ilicifolia* at light about 11.15 p.m. Weather thick, misty rain. Is it not rather late for this rare moth to be out?—W. J. MONK, Tavistock. *September 15th, 1910.* [We suspect our correspondent has named his capture wrongly. The species occurs in the imaginal stage only in early spring, and by September the latest larvæ should have spun their cocoons. A full account of the "Habitats and habits" of this species, both in Britain and on the Continent, was published in *A Nat. Hist. of the British Lepidoptera*, vol. iii., pp. 196-198, and is readily available, whilst all the actual dates of the insect's capture recorded to date are given (*op. cit.*, p. 198), including not only the British, but Continental, captures. Reference to this paragraph shows that March 20th and 25th, 1857, are the earliest recorded dates (both English), whilst mid-June is given as an outside late date for the turf-moors near Hasik, in the Baltic Provinces, by Nolcken. Our knowledge of the species therefore suggests a specimen emerging in September as most improbable. Horton records a *Bombyx* larva, said to be of this species, but the imago not reared, as having been taken August 3rd, 1864, near Lynton, in North Devon (see *Nat. Hist. Brit. Lep.*, iii., p. 193). This is, of course, reasonable for the fullfed larva, but a September imago is so far quite unknown.—ED.]

*THYMELICUS ACTEON* IN THE ISLE OF WIGHT.—About the middle



of August Mr. G. W. G. Baass, of Sandown, captured a pair of "skippers" in this neighbourhood, which on closer examination proved to be *Thymelicus acteon*. Unfortunately, thinking his identification might be wrong, an idea that I am afraid I encouraged until I saw the specimens later, he made no special search for more. There is no doubt, however, that they are ♂ and ♀ of this species, and to make quite certain I sent them to Mr. L. B. Prout, who kindly allows me to say that he confirms their identity. Of course, this seems a most unlikely insect to occur at Sandown, but it will be interesting to recall Mr. Prout's record of *Acidalia degeneraria* (*Ent. Rec.*, vol. xiv., p. 274), and in a lesser degree, my own capture of *Celaena haworthii* (*Ent. Rec.*, 1907, p. 303), both in the same locality, although, as Mr. Prout points out, there is a great difference between the capture of those single specimens and this pair of insects. If any entomologist has been trying to establish *T. acteon* here, and this should meet his eye, perhaps he would kindly inform us in the pages of this journal.—J. TAYLOR, 23, High Street, Sandown. September 26th, 1910.

A RAMBLE IN THE CHEVIOT DISTRICT.—A few notes on the lepidoptera of this district may be of interest. On June 21st, a friend and I left Newcastle for Wooler, and after staying there overnight we walked on the following day up the Harthope Burn to Langleeford. The alder grows by the burn-side in many places, and, resting on the trunks of these trees, we found *Larentia pectinataria* and *Hyssipetes impluviata* common, the latter species being very worn. A single specimen of *Lophopteryx camelina* was taken, and near Langlees a fine specimen of *Hadena contigua* was secured, this species has not been previously recorded for this county; *Cilix spinula* and *Euplexia lucipara* were also taken. We were obliged to take shelter in the afternoon during a heavy thunderstorm, in a small hay shed, and we took from the beams supporting the roof, a good many pupæ of *Caradrina cubicularis*. On leaving Langleeford, the grassy tufts on the top of a stone wall were examined and traces of the larvæ of *Mamestra furva* were soon discovered by the abundant frass at the roots of the grass. My companion, Mr. H. Sticks, put me on the right track of this larva as he had taken it previously in the Alston district. We soon discovered larvæ, and afterwards found them generally distributed in the locality, that is to say, wherever there were stone walls on the tops of which sods of grass had been laid, *M. furva* could be found at the roots; the grass I think is the couch grass. The roots were very tough and took some tearing apart with the fingers. I secured a good many larvæ and also brought back a supply of grass tufts for their food but was not very successful in rearing them, only obtaining 5 specimens out of some 40 or 50 larvæ, it was however chiefly due to the fact that they were badly parasitised. The first imago emerged on August 2nd. In the evening, specimens of *Hepialus velleda*, *H. lupulinus*, *Melanthia ocellata*, *Melanippe montanata*, *M. subtristata*, and *M. tristata* were common. We put up for the night at Langleeford, and, on the following day, skirted the Cheviot by way of Lambden Burr, a tributary of the College. Larvæ of *Cleoceris viminalis* were observed about full-fed. Empty cocoons of *Saturnia pavonia* and *Phragmatobia fuliginosa* were seen on the heather. We rested a little while at Dunsdale Farm, at the foot of Cheviot, on the north side, where we learned that the Peregrine Falcon had successfully nested

on Cheviot, rearing three birds out of four eggs. The birds and nest had been under careful observation to prevent molestation until the young were able to get clear away. Between Dunsdale and Southern Knowe, the latter place a small fan near the junction of the Lambden Bun with the College, we observed flying about the hill sides in the sun, numbers of *Phytometra aenea* and *Pyrausta ostrinalis*. A walk through a beautiful district, down the magnificent College Burn, from Southern Knowe to Kirknewton Station on the Wooler line, finished our little tramp.—G. NICHOLSON, 26, Lancaster Street, Newcastle. September 28th, 1910.

## CURRENT NOTES.

We are pleased to congratulate Sheffield University in having honoured so excellent a biologist as Mr. W. Bateson by conferring on him the honorary degree of D.Sc. The meeting of the British Association at Sheffield was made an occasion for the bestowal of honorary degrees on a number of eminent men of science at a special congregation of the University held on September 6th. The first occupant of the Chair of Biology at Cambridge University was one of this select company.

On July 19th, 1910, at 4.30 p.m., the unveiling of the James Fletcher Memorial Fountain, took place at the Central Experimental Farm, Ottawa, by the Hon. Sydney A. Fisher, Minister of Agriculture. The ceremony was a complete success, and, besides a number of distinguished visitors from a distance, official representatives from the Royal Society of Canada, the Entomological Society of Ontario, and other learned societies, assembled with the members of the Ottawa Field Naturalists' Club (under whose auspices the Fountain was erected), and a large number of local visitors, took part in the proceedings. The speakers included, besides the Hon. S. A. Fisher, Mr. E. R. Cameron, K.C., Chairman of the Fletcher Memorial Committee, the Rev. Dr. Bethune, the learned Professor of Entomology at the Ontario Agricultural College, and for so long editor of the *Canadian Entomologist*, Dr. Wm. Saunders, C.M.G., Director of the Dominion Experimental Farms, Dr. W. D. Le Sueur, Secretary of the Royal Society of Canada, Mr. F. T. Shutt, Chief Chemist of the Dominion Experimental Farms, whilst Mr. R. B. Whyte spoke on behalf of the Ottawa Field Naturalists' Club, with which James Fletcher had so intimate a connection. The Memorial Fountain, an excellent picture of which appears in the *Canadian Entomologist* for September, 1910, bears the inscription—

1852 — 1908.

JAMES FLETCHER, F.R.S.C.

A Pioneer Canadian Naturalist.

A tribute of affection from the Ottawa Field Naturalists' Club  
and his many friends.

As Dr. Bethune says, the Memorial has been erected less as tribute to his scientific attainments, then as a token of our love for the man himself, and the devoted affection in which we all held him. As a man of Kent, all Kent naturalists will think of James Fletcher with pride, whilst his adopted country adds to that pride the intimate feeling of kindly affection.

An important section of the Royal Photographic Society's Exhibi-



tion, held at the Pall Mall Gallery, 5a, Pall Mall East, was devoted to Natural History photography, and there was a large number of excellent studies in botany and ornithology by well-known workers. Of entomological interest, a series of prints by Hugh Main, F.E.S., illustrating the metamorphoses of the glow-worm, were deserving of notice, the descriptive notes stating that the ova, larvæ, pupæ and imagines were all luminous. Another frame by the same worker showed *Dyticus marginalis* in the various stages, and were examples of good photography. P. J. Barraud, F.E.S., exhibited an enlarged print of the queen wasp; *Vespa vulgaris*, ♀, showing the attitude assumed during hybernation. A. E. Tonge's fifteen studies of British moths at rest revealed careful work in this somewhat difficult branch of photography.

The stick insect, *Bacillus rossi*, was represented by Dr. G. H. Rodman in twenty well-executed prints of the life-history of this much-photographed insect, and by Walter Bagshaw, another well-known worker. These serve as admirable examples of protective mimicry. A. E. Smith showed an enlarged photograph of the blow-fly, *Musca vomitoria*. Of particular interest was a specimen of natural colour photography by the autochrome process by Edward J. Bedford, the transparency showing eight specimens of the better-known Lycænids, giving very good colour values. A. W. Dennis, a member of the South London Entomological Society, exhibited excellent specimens of the British lichens, one, *Gongylia viridis*, being new to science. In this connection it is worthy of notice that a thoroughly representative exhibit of natural history photography by the best-known authorities is to be seen in the Shackleton Gallery at the Anglo-Japanese Exhibition. Entomologists will also be interested in an extensive exhibit of life-histories of noxious insects in the Agricultural Economic section in the gallery devoted to British Science exhibits.

It can be no longer said that the collection of Micro-Lepidoptera at the Natural History Museum, South Kensington, is beneath contempt. The "Walsingham Collection" is housed, and already the task of moving the specimens into the cabinets has been begun, and a brave show the Adelas and their allies make. Never, probably, has so valuable a gift of scientific natural history objects been made to the nation, and it would be humorous, if it were not so serious, that the Micro-collection, with all its difficulties of naming, etc., will be immeasurably superior to, and freer from blunders than, the butterflies, the "Neps," for example, more accurately named than the "blues." The understaffing of this department is a public scandal; work as hard as the present staff may, it is quite impossible to keep pace with everyday requirements. Cannot the Trustees move the Treasury just a little in this matter? Every Britisher is proud of the Natural History Museum, and the suspects would find no fault with providing necessary means for its minimum upkeep. At present, the staff is hopelessly overweighted.

Attached to the Walsingham Collection, is the "Walsingham Library," a most useful adjunct to the efficiency of the collection, referring as it does more particularly to the necessities of the worker at the Micro-Lepidoptera. Mr. J. Hartley Durrant, the capable and energetic curator, would be very grateful for "Separata" containing

any references to Micro-Lepidoptera from any part of the world, in order to make the "Separata section" of the library as perfect as possible. Anyone with Separata of the Victoria County History lists of lepidoptera is particularly requested to note.

Mr. Durrant further wants for the Museum, examples of British species of *Cordyceps* on British larvæ. Material should be sent to Mr. J. Hartley Durrant, Natural History Museum, South Kensington.

Mr. Banks discusses (*Ent. Mo. Mag.*) certain Tineids, and concludes that *Monopis wearerella*, Scott, "*Zool.*," 1858, pp. 5963-5964 (= *semispilotella*, Strand), is distinct specifically from *M. rusticella*.

The Rev. W. W. Fowler describes a new Coleopteron, *Galerucella fergussoni*, captured at Possil, near Glasgow, in early June and again in August on *Comarum palustre*. But is not this the species that Mr. A. Adie Dalglish first took in 1900 on Possil Marsh, and that is mentioned in Fergusson's list of Coleoptera, published in the *Clydesdale Handbook*, p. 296, 1901, as a fine dark variety of *G. nymphaeae*? If this be so, should not some reference have been made to Mr. A. Adie Dalglish's captures, as they appear to have been the first recorded examples of the species taken in Britain?

We have received the 5th livraison of Mr. Culot's excellent work on the Noctuids of Europe, the plates, if possible, better than ever. We learn that the stones on which the earlier plates were engraved have to be re-used in February next, and that after that time the early parts will only be purchasable at an increased price. Any lepidopterists who have hitherto held over their subscriptions to this excellent work are advised to make up their minds before the price of the early parts is raised.

## SOCIETIES.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY.—*August 25th, 1910.*—RESTING-HABIT OF *HESPERIA MALVÆ*.—Mr. Adkin exhibited a series of *Hesperia malvæ* and read notes on the peculiar resting-habit of the species. SATYRINES.—Mr. Edwards, a box of Satyrines, and called attention to the varied local forms of *Ergolis ariadne*. TYPHLOCYBA CRUENTA, ETC.—Mr. West (Greenwich), a series of the rare Homopteron, *Typhlocyba cruenta*, from Box Hill, and specimens of *Oncotylis viridiflorus* from Ranmore. ABERRATIONS OF LEPIDOPTERA.—Mr. Newman, an intermediate form of *Odontopera bidentata*, a ♀ *Bithys quercus* with adonis-blue blotches on forewings, bred examples of *Dryas paphia* ab. *valesina*, a ♀ *Euchloë cardamines* with a thin streak of bright yellow scaling on the left forewing, and another much darker at base of wings, with aberrant marbling on the underside, a partially gynandromorphic *Amorpha populi*, and a very darkly marked specimen of *Pseudoterpna pruinata* (*cytisaria*). MORPHO CYTHERIS.—Mr. W. J. Kaye, a long series of *Morphe cytheris* (*thamyris*) taken by him at Castro Parana, South America. SWISS LEPIDOPTERA.—Dr. Chapman, rich brassy examples of *Anthrocera filipendulæ*, and specimens of *Pieris rapæ* from near Hospenthal, of large size and single-brooded. LEPIDOPTERA.—Mr. Sich, a specimen of *Aventia flexula* from Wisley, a series of *Coleophora albicosta* from Sheen, and a cocoon and imago of *Nepticula centifoliella*.



STANFORD LIBRARY



Photo. A. E. Tonge and H. Main.

CALLOPHRYS AVIS (FIGS. 1, 2, 4, 5, 6, 7) AND CALLOPHRYS RUBI (FIG. 3).

*The Entomologist's Record, etc., 1910.*



**Notes on *Callophrys avis* (with plate).**

By Dr. T. A. CHAPMAN.

Some more specimens of *Callophrys avis* having emerged after having given my account of the species to the Entomological Society of London (*Trans. Ent. Soc. Lond.*, 1910, p. 85, and *Proc. Ent. Soc. Lond.*, 1910, p. xxi), I am able to give a few further notes on the range of variation in the species, and to report a very curious result of "forcing." I am also able to present photographs of the living butterfly taken by Mr. H. Main with that perfection that is in no need of further praise from me.

To take first the results of "forcing." Expecting that the pupæ I had would probably emerge naturally in April, and wishing to leave home during that month, I proposed to get the butterflies out before I left by "forcing," and accordingly put some pupæ in a temperature of 60° to 70° on January 23rd, and the remainder on February 5th. The first unexpected result was that two specimens emerged four days after being so placed, and several others a day or two later. These individuals must have differed from their fellows in having already made some progress in the maturation of the imago at the end of January. After a further few days other specimens emerged, and continued to do so till towards the end of February, when they ceased to appear. There still, however, remained some pupæ, and I concluded that my forcing operations had resulted in killing these. However, I left them at ordinary temperature when I left home on April 2nd, and found them unchanged when I returned home on May 18th. The result was very gratifying, as instead of these pupæ being dead, it appeared that they might have been most carefully consulting my convenience, as on May 15th a ♂ emerged, and others during the following ten days, only two pupæ remaining over really dead. The precise explanation of this effect of forcing is not very evident. I ought to say that from the laying of the eggs to placing the pupæ in a warm temperature at the end of January, all were treated alike and had kept fairly well together. The theory I frame on the matter is, that *C. avis* naturally spreads its emergence over a long period, probably from mid-February to well into May, perhaps a period of nearer three than two months. Forcing brought out at once those that proposed to be earliest, and hastened forward those that represented emergences up to perhaps mid-April or later. Those booked for later emergence had made no progress towards leaving pupal conditions, and were in consequence rather retarded than hastened by the too early high temperature.

There is, I think, no record of *Callophrys rubi* passing two years in the pupal state, and *C. avis* (a much more southern insect) would be even less likely to do so. Nevertheless, the effect on these later pupæ would be quite parallel with that on pupæ of species that do pass, upon occasion, more than one winter as pupæ. In these species it is, I think, usual rather than occasional, to find that, if pupæ are forced before they have had proof of winter having come (and gone?), an unusual proportion, or even all, refuse to emerge that year, but "go over." It may be easier to appreciate this curious result if tabulated thus:—

NOVEMBER 15TH, 1910.

January 23rd.—Some pupæ placed at temperature of 68°.

February 5th.—Remainder placed at temperature of 68°.

February 9th.—♂ and ♀ emerged from lot of January 23rd and also from lot of February 5th, and continued to emerge till February 24th.

March 14th.—None having emerged for more than a fortnight, removed to ordinary temperature.

May 15th.—Two ♂ s emerged. Came out at intervals till

June 7th.—Last one emerged.

I may here refer to and correct a curious oversight in my paper in *Trans. Ent. Soc. Lond.*, p. 105. I say that the honey-gland had not been recorded in the *Thestoridi*, as a matter of fact I had myself referred to it in *Thestor ballus* (*Ent. Rec.*, xvi., pp. 279, 281, 1904), and others had done so. The error arose from my writing first *Callophryidi* (including *Callophrys*, but not *Thestor*) and correcting to *Thestoridi*, without thinking of the error so resulting, on feeling satisfied that *Callophrys* and *Thestor* belonged to the same tribe.

In *Proc. Ent. Soc. Lond.*, 1910, p. xxi, I give some notes on the earlier emergences. The later ones differ from the earlier ones in the decidedly greater accentuation of the sexual dimorphism. This is so great as to be quite a specific character (arranging these with the others where it is less strong) in comparison with *C. rubi*. In *C. rubi* it is comparatively absent, and actually very slight. Beyond the androconial brand the ♂ s differ from the ♀ s in averaging slightly smaller (in all races?) and in having the "tails" at anal angle more pronounced than in the ♀ s, but there is no difference whatever in colouring. In these late emerged *C. avis* the ♂ s are the smaller, but only slightly, one is 37mm., about that of the largest ♀ s, the smallest specimen is a ♂ 32mm. The great difference is in coloration, the ♀ s are with considerable uniformity of a ferruginous-brown, contrasting as light and bright with the richer dark brown of the ♂ s, whose darkness is enhanced by the often nearly black of the lines of the veins, a feature hardly seen in the ♀ s. The ♂ s vary more in colour than the ♀ s, two are very light, one almost lighter than the ♀ s, the light tint looking even lighter than in the ♀ s in the specimen owing to the contrast against its dark veins. In this specimen the forewing fringes are of the same colour as the rest of the wing (pl. vii., fig. 7), the normal condition being white fringes with dark (blackish) coloration opposite each vein, and tipping each white scale, the amount of black varying in different individuals, more abundant on the forewing than on the hindwing, but never entirely overwhelming the white.

In *C. rubi* the forewing fringes are usually dark, always uniform, and when paler are greyish-white, the individual scales paler (not darker) towards their tips, and with no variation opposite the veins. On the hindwings the fringes of *C. rubi* are markedly white and dark, giving an appearance very often of a tail to each vein.

One eccentric aberration of the ♀ has the left forewing 1mm. longer than the right, with slightly darker hind margin above, and a bluer green below than its fellow.

On the underside there is also a decided sexual dimorphism, the males being of a bluer green. The females have the yellower or almost ruddy tone alluded to in *Proc. Ent. Soc. Lond.* The similar variations in colour in *C. rubi* there referred to, have not, I think, usually any sexually dimorphic character, but are sometimes, perhaps, racial.



The white line beneath varies a good deal, it fades towards the hind margin, so that one may be in doubt in many instances whether to say, for example, it extends to vein 7 or to vein 2. There are several specimens in which it is absent from the forewing; there is always one spot on the hindwing, and it usually extends down four interspaces, perhaps to be reported as visible, but hardly so, for several further spaces in most examples.

The dark margin to inner side of the white spots so usual in *C. rubi*, is present in a few ♀s of *C. avis* on the forewings, distinct only in the interspace between veins 2 and 3 as a brown shade, never on the hindwings, and only faintly indicated on the forewing in front of the space 2-3 in the few cases where it is present.

Mr. Main's photographs of the underside of the living butterfly bring out well the peculiar velvety smoothness of aspect of *C. avis* when alive, as contrasted with the more crisp and sharp appearance of *C. rubi*.

I noticed that though *Coriaria* is the foodplant of *C. avis*, and that the larva could not be got to eat any of the ordinary foods of *C. rubi*, it was, nevertheless, the case that *Coriaria* did not grow at Hyères, although *C. avis* occurred there. The conclusion, of course is, that *C. avis* must have some other foodplant. Last spring (1910) I spent several weeks at Hyères, with a view, so far as entomology was concerned, of finding out something about this. Unfortunately, the season was unpropitious, even *C. rubi*, though on the wing all the time, was often invisible, and scarce even in places where I have seen it abundant. I failed to find a specimen of *C. avis*, so that the only result of my search was confirming the fact that *Coriaria* did not grow there, a fact that the local botanists had sufficiently established, and the question of the alternative foodplant remains for the future to solve.

It seems desirable to note an imperfection in pl. xv. (*Trans. Ent. Soc. Lond.*, 1910), since it is of some importance. It is that of the coloured drawings of the larva, in which Mr. Knight's drawings show certain oblique shadings, bringing out very well the undulating surface of the "slope." In the plate these shadings are accentuated, so that, in the right upper figure especially, they rather show markings than mere shadings to bring out humps and hollows. This is unfortunate, since the fact is that there are no oblique markings on the larva of *C. avis*, a circumstance (with others) sharply distinguishing it from that of *C. rubi*.

I have heard from Professor Mendes (São Fiel) that he has received a specimen of *C. avis* taken in May, 1910, at Jerez. Through Mr. C. Oberthür and Mr. H. Powell, I have been in communication with Mr. E. Holl, from whom I learn that he has a series of *C. avis* taken near Algiers. He has a specimen (♀) taken at Ben-Aknoun, April 6th, 1904. This year he took a number at Maison-Carrée from April 20th to May 1st. He thought they were a form of *C. rubi* var. *fervida*, being struck by the difference of the streaks and spots, and especially on account of their late appearance, April 20th, at about 120ft. above sea level, whilst at Bonzaréa (about 1200ft.), *C. rubi* was taken end of March and beginning of April.

The specimens are smaller than the French ones, 28mm. to 30mm., the ♀ from Ben-Aknoun, 32mm., they resemble Oberthür's fig. 420

of a Tunisian specimen. Both localities are uncultivated, and covered with a variety of plants and shrubs, very similar, apparently, to the rough ground of the Riviera. The place (at Maison-Carrée) where he took the species this year was of an extraordinarily limited area, and he and Madam Holl searched in vain twenty yards away from a bunch of Lentisques, to which the butterflies came to bask in the sun, sheltered from the wind. His observations do not suggest what the foodplant is in Algeria.

#### EXPLANATION OF PLATE VII.

Figs. 1 and 2.—*Callophrys avis* from life. Photographed by H. Main.

Fig. 3.—*C. rubi* from life. Photographed by A. E. Tonge.

Figs. 4 and 5.—Average ♂ and ♀ of *C. avis*, showing usual amount of sexual dimorphism.

Fig. 6.—Rather darker ♂ with pale brand.

Fig. 7.—Male aberration with very light ground colour and brown cilia.

Figs. 4, 5, 6, 7.—Photographed by A. E. Tonge.

### The Lepidoptera of Ruffet's Wood and neighbourhood, 1909-10.

By FREDERICK J. COULSON.

Having for the past two summers spent my vacation at Eastbourne, I have been enabled on several occasions to visit that old time locality—the Abbot's Wood region. The following recital of the insects taken or seen upon these occasions may, therefore, it is hoped, be of some interest to those who may anticipate paying attention to this district—more particularly to those, who, like myself, are interested in the Micro-Lepidoptera; though I have to admit that I have not yet passed out of the tyro stage.

My first visit to this locality was on June 16th, 1909, and the district being entirely new to me, the visit was more for survey purposes than for solid serious collecting. Having no entomological friend to indicate the most profitable route, my inexperience prompted me to take train to Polegate, and set out for a four mile tramp along the main road to Hailsham. This route afforded little opportunity for collecting other than hedge searching and beating. The sun was obscured during the greater part of the time, and except for solitary examples of *Polyommatus icarus* and *Coenonympha pamphilus* no butterflies were on the wing. Opposite some old houses, about a mile from Polegate, the spindle bushes were covered with nests of *Hyponomeuta cognatellus*, and the tall hawthorns a little beyond, were greatly disfigured by the nests of its congener, *H. padellus*. Occasionally a larva of *Diloba caeruleocephala* was to be seen resting upon the tips of the sideshoots of the hawthorns, and from the willow bushes in a swampy tract further along the road, some larvæ were picked which subsequently produced *Tortrix rosana*, and some fine dark *T. podana*. From a few ova laid by a ♀ *Coremia ferrugata*, beaten from a clump of willows near by, the resultant imagines, which emerged August 11th-14th were all red-banded, closely resembling the ♀ parent.

Abbot's Wood was reached in the early afternoon by a path to the left after passing a few houses, and the sun just then breaking from the clouds some hope of good work was entertained. Several examples of *Augiades sylvanus* were observed flitting along the hedge leading to the wood, and in a clearing scattered over with fallen logs, near the entrance, *Brenthis euphrosyne* occurred commonly but in rather sad



condition. One example of *Brenthis selene* was also taken. From a hole a ♂ example of *Boarmia consortaria* was fanned, and *Venilia maculata*, in rather faded condition, was not uncommon, starting from the bushes as one passed by. *Pechipogon barbalis* flew sparingly during the late afternoon amongst the birch and firs, and *Eulype hastata* was netted flying in the sunshine. An example of *Perinephila lancealis* rose from the long grass of the coverts to the left of the path through the wood, and several *Asthenes luteata* were disturbed from a maple bush in a narrow lane. *Botys fuscalis* was turned out rather frequently during the day, whilst *Bactra lanceolana* occurred in every rushy spot.

Sunshine becoming intermittent, attention was turned to the trees and bushes fringing the pathway through the wood, and a succession of Geometers and Micros resulted until I gave over after sundown. At every shake *Adela degeerella*, in excellent condition, flew out, frequently accompanied by *Ecophora panzerella*. The following were also met with—*Taleporia tubulosa*, *Incurvaria oehlmanniella*, *Lampronia luzella*, *Harpella geoffrella*, commonly, *Nemophora metaxella* (one), *Ecophora tripuncta* (one), *Scopula olivialis* (one), *Iodis lactearia*, occasionally, *Acidalia subsericeata* (one), *Xanthorhoe montanata*, commonly, *X. sociata*, commonly, *Amoebe viridaria*, in good condition but scarce, *Cidaria corylata*, commonly and in fair condition, *Cabera pusaria*, a few, *Bapta temerata*, in splendid plumage occasionally, *Capua favillaceana* (two), and several *Pardia tripunctana*. About 4 p.m. *Roxana arcuana* was flying abundantly about those bushes that caught the slanting rays of sunshine through the foliage.

The thick clumps of sloe at the other side of the wood produced *Penthina pruniana*, and *P. variegana* in great abundance; whilst tapping the privet bloom in the hedges on the road to Wilmington dislodged an example of *Adela croesella*, in splendid condition.

The tedious return walk to Polegate via Wilmington was not entomologically profitable. Of the Crambids, *C. hortuellus* was noticed, and *Leucania impura* alone of the Noctuids was observed, the latter being not infrequently netted in the dusk, flying by the roadside above the grass growing at the base of the hedges. One *Boarmia repandata* was caught and ♂ *Ourapteryx sambucaria*, together with *Hemithea strigata*, were not uncommon, flying along the hedges as darkness set in.

On the next occasion, June 21st, the start was made from Hailsham, and the weather, compared with that on my previous visit, was glorious. *Glyphipteryx fuscoviridella* was in abundance all over the second field after crossing the recreation ground, threading its way amongst the long grass in the bright sunshine, together with an occasional rather worn *Dicerorampha plumbagana*. The rushes bordering a small pond in this field were the veritable home of *Glyphipteryx thraussonella*, the brilliant little gem flitting out in dozens whenever the rush stems were touched. The conformity and condition of the pond margin did not, however, lend to observation upon the fanning habits of the species. *Hydrocampa nymphaeata* alone of the "china-marks" was disturbed from the bordering vegetation. In the field beyond, *Anthrocera filipendulae* could be seen darting over the long grass, and *Epinepheltia jurtina* was flitting about on all sides. The hedges produced only a few dilapidated *Tinea cloacella*.

Upon reaching the road and enquiring as to the direction of

Abbot's Wood, I was much gratified by a courteous invitation from the owner to explore Ruffet's Wood, which, needless to say, I promptly accepted. This wood lies on both sides of the road in the direction of Milton Hide, but it was to that portion lying on the left the invitation was given. The entry was through a white gate, and at a short distance beyond after passing through a similar gate, I entered upon what I believed to be new ground to the entomologist. A broad direct path has been cut the entire length of the wood, and minor straight paths branch off at various points. Three distinct areas occur. The first portion lying on either side of the central avenue was covered with a pretty fluffy grass, and amongst this, small firs had been planted near the path, the background to the edge of the wood consisting of scattered bushes. Here in the blazing sun, at the slightest movement of the ornamental grass, *Crambus pascuellus*, in excellent condition, rose in half dozens, soon, however, to resettle upon the grass and small firs. *Brenthis euphrosyne* and *B. selene*, both in poor condition, were also on the wing in moderate numbers; and one specimen of *Stenoptilia pterodactyla* ab. *fusca* was netted flying over the undergrowth.

The main wood was not entered, but passing along the main avenue the first broad path to the left was followed. Upon the slope to the right—an ideal collecting ground—*Coenonympha pamphilus* was flitting in numbers. Wild flowers were here in abundance, and several *Anthrocera filipendulae* were observed upon the blooms. *Catoptria hypericana* was flying rather commonly in the sunshine at the base of the bushes, and one *Ennychia octomaculata* was netted rising from the long grass. From the hazel bushes two ♀ *Numeria pulveraria* were disturbed, and a faded *Venilia maculata* also appeared. Upon the larger boles *Scoparia dubitalis* (*pyraella*) was abundant. The glades about here, however, were productive of little beyond *Xanthorhoë montanata*, *Sericoris urticana* and *Crambus pascuellus*, the latter, at about 2.30 p.m., flying at the edge of the firwood.

The route to Abbot's Wood was continued, and an occasional tap at the hedges resulted in the capture of *Cabera pusaria* and typical *Cidaria truncata*. The Hide was entered by a swing gate, and keeping to the left along the edge of Wilmington Wood, promiscuous beating was indulged in. *Catoptria ulicetana* was as usual in great abundance about the furze bushes, and a stray worn example of *Orneodes hexadactyla* was disturbed from a clump containing honeysuckle. Occasional Geometrids and Crambids were also netted, but as a whole they did not readily take to the wing. *Xanthosetia hamana* was obtained from the thistles scattered over the waste.

An example of *Anaitis plagiata* was found resting upon a post at the farmhouse, by the Old Oak Inn, and an *Acidalia aversata* ab. *spoliata* was observed resting upon the upper surface of a hazel leaf in the shady lane. In the field on the right of the farm-house *Anthrocera filipendulae* were to be seen in numbers upon the clover-heads.

The return journey over the Hide, between 4.30 p.m. and 6 p.m., was devoted to the Geometrids and Crambids, now appearing upon the wing. *Bapta temerata* was now worn, but still fairly numerous, as was also *Cidaria corylata*. *Amoebe viridaria* was also faded, but *Iodis lactearia*, in fair condition, was noted. From the heath *Crambus hortuellus* was rising in numbers, the greater portion being of the



*cespitem* form. An example of *Crambus inquatellus* was also netted, and three *Pechipogon barbatus* were taken flying past.

On June 30th, when the next opportunity of visiting this locality occurred, a slightly different route to Abbot's Wood was followed. After crossing several fields beyond the Recreation Ground at Hailsham, a green path to the right leading, between high hedges, to the north edge of Ruffet's Wood, was surveyed. From the hedges, at the slightest touch, clouds of *Sciaphilidae*—*S. subjectana*, *S. virgaureana*, etc.—started upon the wing. *Lomaspilis marginata* and *Metrocampa margaritaria* fairly commonly, and numbers of the commoner Tortrices were disturbed before the wood was reached. Along the edge of the wood, after turning to the left, beating produced *Gelechia terrella* and *Catoptria ulicetana* in great abundance, as well as specimens of *Acanthopila alacella*, typical *Cidaria truncata*, the *Baptas*, *Ephippiphora pflugiana*, *Capua farillaceana*, and many others.

As the start had been made late in the morning, I pressed on to the Old Oak Inn, beyond the Hide, and entered Abbot's Wood about 4 p.m. About an old hawthorn bush, in a little meadow near the Inn, *Tinea arcella* was in moderate numbers—settling frequently upon the twigs. A stray example of *Stenoptilia pterodactyla* was taken near by. *Mamestra dentina*, a light form, was found resting upon a firbole about a foot from the base, and *Scoparia ambigua* was also noted, frequently.

A muddy path through the thickets being followed, a meadow surrounded by the wood was reached. Here *Anthrocera trifolii* was observed, and *Adscita statice* was netted as it rose from a flowerhead. As the last rays of the sun touched the upper portion of the meadow, leaving the lower part cast in shadow, hundreds of *Stenoptilia pterodactyla*, in all its forms, were to be seen threading their way amongst the mixed herbage, frequently clinging to the stems of the tall grasses. *Ebulea crocealis*, apparently just emerged, was taken as it commenced its flight. *Botys fuscalis* also appeared amongst the grass and wild strawberry, and one *Perinephila lancealis* was secured. At the upper portion of the meadow, *Ephippiphora trigeminana* was noticed flying in clusters above the smaller bushes.

The following were noted during the return across the Hide—*Scoparia dubitalis* (ab. *pyralella*), rising from the heath clumps, and *Phycis ornatella*, flying over the waste; whilst *Xanthosetia hamana*, in the usual worn condition of the species, was common. *Bapta temerata* was now considerably frayed, and *Iodis lactearia* had completely gone. A ♂ *Timandra amata* was netted amongst the ditch herbage.

In the dusk, *Dasycera oliviciella* was netted, flying at a height of about six feet along the edge of Ruffet's Wood, and a ♀ *Hepialus hectus* was taken flying near the base of the hedge. *Sericoris lacunana* and *S. urticana* were noted at the woodside in abundance, together with *Symaethis oxyacanthella* (*fabriciana*). Upon arriving at Hailsham I found the train had departed, so I set out in the darkness for a four mile tramp to Polegate. Being without my lantern my captures were necessarily few. A ♂ *Ptilodontis palpina* was netted flying alongside the wood past Hailsham, and the ♂s of *Metrocampa margaritaria*, and *Boarmia repandata* were observed rather frequently.

My first visit during the present summer was on July 7th, and for the greater part of the day beating engaged my attention—the sun only occasionally peeping out. *Sciaphila subjectana*, *S. virgaureana*

and *S. nubilana* were, of course, numerous in the hedges near Hailsham; and *Spilonota dealbana*, with *Dictyopteryx loeflingiana* also occurred in plenty. Along the hedge to the left of the field, past the Recreation Ground, larvæ of *Depressaria nervosa* were frequent in their silken tubes amongst the seeds and flowers of *Oenanthe crocata*. Some individuals of the series from these larvæ, bred during August, showed a pink shade over the forewings. At the pond the ♂s of *Hydrocampa nymphasata* were common, and one ♀ *Cataclysta lemnata* was also noted. In the fields beyond, *Epinephele jurtina* was flying in abundance amongst the long grass, but no *Glyphipteryx fuscoviridella* were observed. The slightest disturbance of the undergrowth or of the tall *Umbelliferae* along the hedges caused *Sphaleroptera ictericana* to rise.

In the lane leading to the wood, beating was extremely profitable as regards common species. *Spilonota dealbana*, *Dictyopteryx loeflingiana* and *Tortrix heparana* were in excellent condition and much in evidence, coming out in dozens at each touch of the oaks and hazels. Several *Rhodophaea consociella*, in splendid plumage, were taken, and typical *Acidalia aversata* were common. The progeny of a ♀ *Angerona prunaria* ab. *corylata*, which was taken here, are now feeding contentedly upon privet, having emerged from the ova on July 22nd and 23rd. A splendidly-marked example of *Paedisca corticana* was taken from a birch bole; and along the edge of the wood at the end of the lane several examples of *Lomaspilis marginata* and *Hemithea strigata* were disturbed whilst worn typical ♂s of *Angerona prunaria* proved to be rather common. *Tortrix sorbiana* (worn), *T. crataegana* (one) and *Gelechia terrella* (commonly) and *T. rosana* were also noted. Judging from the number of pupæ obtained from the small quantity of yellow rattle seedheads which I collected from the field at the side of the wood, *Emmelesia albulata* must occur in great abundance in its season.

The roadway was reached about 3.30 p.m., my attention was then given to a patch of nettles and thistles, and several examples of *Ebulea crocealis*, and a specimen of *Erastria fasciana* were netted. No fresh species were noted until 4 p.m., when, upon reaching the gate at the Hide, several *Stenoptilia pterodactyla* were observed amongst the long grass by the roadside. On the heath a stray example of *Ortholitha plumbaria* was netted, and from the furze bushes an example of *Dicrorhampha peticerana* was disturbed, in company with the usual clouds of *Catoptria ulicetana*. The trees bordering Wilmington Wood were the home of countless *Tortrix viridana*, *T. heparana*, *T. corylana* and *T. xylosteanæ*, the great majority being in excellent plumage. On the right of the Hide, about 5 p.m., *Grapholitha penkleriana*, varying considerably in the amount of white in the central area, were flying commonly about the undergrowth at the base of the hawthorns; and *Argyresthia nitidella* fluttered out in abundance wherever the hawthorn twigs were touched. From the latter species a selection was made of the cream variety (*ossea*), which appeared to be fairly common. An example of *Gelechia vulgella* was also seen.

Between 5.30 p.m. and 6.30 p.m., attention was paid to the small meadow lying to the left of the road near the Old Oak Inn. *Anthrocera filipendulae* was noted frequently upon the flower-heads. Sweeping the *Lotus corniculatus*, here growing in clusters amongst the long grass, produced fine fresh *Gelechia ligulella* abundantly, as many as a



dozen examples being found in the net after one stroke. In company with these occurred *Aristotelia tenebrosella*, and flitting from bent to bent *Stenoptilia pterodactyla* was in profusion. *Iodis lactearia* and *Hemithea strigata* were early upon the wing, both, however, being much faded.

On the return journey over the heath, *Crambus culmellus* and *C. hortuellus* were noted, the latter not in the profusion of the last occasion. *Scoparia dubitalis* (*pyralella*), worn, was seen, and an example of *Cledeobia angustalis* was netted as it rose from a heath clump about 6.45 p.m. Clouds of *Tortrix xylosteana*, *T. viridana*, *T. corylana*, etc., with a few *Croesia bergmanniana* and *Tortrix adjunctana*, were now upon the wing, and the walk alongside Ruffet's Wood and through the lanes towards Hailsham, was therefore devoted to the detection of peculiar forms. Nothing striking was observed beyond some splashed examples of *Tortrix corylana*, and well-marked individuals of *Dictyopteryx loeflingiana*. At the edge of the yellow rattle field by the wood at 7.45 p.m., *Tortrix rosana* was flying in dozens about a hedge containing roses and hawthorn, in company with worn *Spilonota rosaeolana*. A ♀ *Euchloris pustulata* was boxed from a low hazel twig, but her progeny, I regret to say, was not carried beyond the first ecdysis, because of the scarcity of oak in my neighbourhood.

On the last visit, on July 19th, the weather conditions were the most favourable of all. The whole day the heat was extreme, and consequently the greater portion of the time was devoted to diurnal lepidoptera. *Epinephele jurtina* was in profusion in the fields. Beating produced principally *Spilonota rosaeolana*, *S. ocellana*, *S. dealbana*, *Dictyopteryx loeflingiana*, *D. forskaeana*, *Miana bicoloria*, *Sphaleroptera ictericana*, *Argyresthia nitidella*, and typical *A. goedartella*. Occasional *Stenoptilia pterodactyla* were still to be observed amongst the long grass by the hedge-sides. Worn ♂ *Hydrocampa nymphaeata* were still common, and a worn ♀ *Cataclysta lemnata* was disturbed at the small pond. A typical ♀ *Angerona prunaria* was disturbed from the oaks in the lane, and fertile ova were again obtained. Numerous *Epinephele jurtina* and *E. tithonus* were sunning themselves upon a group of thistles by the roadside, whilst worn ♂ *Ebulea crocealis* were obtained from the mixed herbage, in company with *Sericoris urticana* and *S. lacunana*.

In Ruffet's Wood, *Crambus pascuellus* was the first insect noticed, and proved to be more worn and less common than on the previous visit. Tall thistles had grown up amongst the bushes on the *B. euphrosyne* ground, and upon these occasional *Dryas paphia* were seen slowly fanning their gorgeous wings in the bright sunshine. *Enodia hyperanthus* was in abundance, with *Epinephele tithonus*, flying about the brambles; whilst several *Stenoptilia pterodactyla* were disturbed from the undergrowth, and *Adopaea flava* (*thamnus*) was noticed frequently darting over the tops of the long grasses. An occasional shake of the bushes resulted in a few more or less typical *Acidalia bisetata* being started.

The firwood added *Paedisca corticana* (grey form), to the list, but no var. *nigricans* was noted. In the upper portion of the wood, *Endotricha flammealis* was on the wing in the afternoon, and five examples of *Herminia derivalis* were secured, being possibly disturbed from their resting-place amongst the long grass. In the narrow rides of the main wood, towards late afternoon, many examples of *Acidalia*

*bisetata* were disturbed from the overhanging trees—one specimen being wholly suffused with dark grey, and the remainder of those taken included several ab. *fimbriolata*. From the dark form and a banded example ova were obtained and the larvæ are at present hybernating upon the remnants of their foodplant, knotgrass. An example each of *Brachmia rufescens* and *Setina irrorella* were also taken, the latter apparently just emerged; and about 6 p.m. *Rhodophaea consociella* was on the wing about the oaks. The following were also more or less abundant throughout the wood, *Argyresthia nitidella* (no ab. *ossea*), *Spilonota dealbana* (including the grey suffused form), *S. ocellana*, *Argyresthia gaedartella*, *Dictyopteryx loeflingiana*, *D. forska-leana*, *Tortrix aylesteana*, *T. crataegana*, *T. rosana*, *T. viridana* and *T. corylana*.

### Three weeks in the Abruzzi.

By GEORGE WHEELER, M.A., F.Z.S., F.E.S.

An unexpected opportunity of visiting the Abruzzi in July, particularly since for me entomology was to be admittedly the principal point of the expedition, was indeed a thing to be hailed with joy, even though the time at my disposal was all too short. The whole district is practically unworked (with the exception of the Gran Sasso d'Italia, the highest point of the Apennines), and, though during my stay at Roccaraso, I saw in the distance two nets, belonging I am told to German collectors, yet I believe that, entomologically speaking, "we were the first that ever burst into that"—unexplored land must be substituted for "silent sea." I made up my mind from the beginning that information was a much more important thing to acquire than cabinet specimens, so that the collection I brought back with me is remarkable rather for its interest than for the number of its specimens or the excellence of their condition. This being to some extent of the nature of pioneer work, it will, I think, be more useful to depart somewhat from the general run of papers on better known localities, and to enter into more detail as to the geography of the district, the means of transit, the nature of the "hotels," and so forth, than would be needed in writing of Switzerland or the Riviera. I propose, therefore, to begin with a few general observations, and then to take each of the places visited separately, ending with a list of all the species taken or observed, with the localities in which each was to be found. I shall add in parentheses the names of places in the Apennines, but outside the Abruzzi, *i.e.* ("Subiaco"), and in square brackets ["Rome"] for such species as I took in my one afternoon on the Palatine Hill.

We were favoured throughout with magnificent weather, one glorious day succeeded another, and this, in itself, was, in such a summer, a priceless boon; a bad thunderstorm during my one afternoon at Fiesole was the only disappointment. On the whole, especially at the higher altitudes, the number of specimens was greatly in excess of what I had been led to expect from previous experience of other parts of the Apennines, though there was nowhere quite the profusion that one is accustomed to in Switzerland, or even in certain favoured parts of England; the lower-lying localities, however, produced a much poorer fauna, which is doubtless accounted for by the fact that the valleys are cultivated to the extreme of possibility, while the cornfields on the heights are largely interspersed with short



pasture and woodland, as well as with considerable tracts of waste land, much of which is quite beyond a possibility of cultivation. On the other hand, the tree limit is far lower than in Switzerland, and the upper parts of many of the mountains are utterly bare of vegetation, and consequently also of insect life. My time was, however, too short to enable me to form any general conclusions, and as I never got in more than two visits to any given spot, with the exception of one specially favoured locality at Roccaraso, the fact of any species not having been seen at any particular place is no argument against its occurring there, especially since in each locality that I visited twice, I found species on the second occasion which had not put in an appearance on the first. I am convinced that the possibilities of this region are great, and going into it absolutely without knowledge, I have found three excellent spots in the Abruzzi, *viz.*, Roccaraso, Scanno, and Palena, and one—perhaps the best of all—outside the province, but still well in the Apennines, *viz.*, Subiaco. I only hope that my short experience will stimulate others to try their luck in these parts, for I am sure they will be richly rewarded. Of course, there are drawbacks. In the first place, it is absolutely necessary to be fairly at home in Italian, for not only does one rarely meet anyone capable of speaking a word of anything else, but their own dialect is a difficult one to understand even for Italians from other parts of Italy; the end of most words and the beginning of many is entirely omitted, which, while it simplifies the inflected parts of speech, makes sad havoc of the others; still, a few days makes one accustomed to their idiosyncrasies, and they never have the least difficulty in understanding the more usual form of the language. When they speak anything else, moreover, it is almost certain to be English, as many of the Abruzzesi spend some years in America, so that if difficulties in mutual understanding should occur, it is always worth while to try English on the chance that, if one's interlocutor does not know any himself, he may be able to fetch someone who does. Then, again, the accommodation at most places is extremely primitive; but to set against that, the primitive inns are mostly very cheap, and the cooking is almost universally beyond reproach; moreover, the beds are extremely clean, so much so, that one must be on the look out against damp sheets. All water, even for tooth-brushing purposes, should be boiled, and milk is safer boiled too. The people are kindly and interested, and quite without contempt for one's net, though it is perhaps better only to let it be seen by grown-up people, lest the friendly interest of the children should show itself in numerous "followers," or in the offer of crushed and useless specimens, caught, after careful stalking, with the hand or the cap, and which one cannot hurt the captor's feelings by refusing to accept. One advantage further—the Abruzzesi never beg! the difference at Subiaco was painful. Brigandage, even in the remotest mountain districts, is absolutely a thing of the past, and has been so for more than thirty years; on the other hand, there really is in some districts, *e.g.*, Palena and Subiaco, a certain amount of danger from wolves, if one adventures oneself quite alone too far into the heart of the wooded mountains, but, in the summer, even this is reduced to an almost negligible quantity, and two or three people together are always considered quite safe.

With regard to the butterflies to be found in the month of July,

two things struck me specially, the large number of *Lycænids* (in the widest sense) and the extreme poverty of the *Erebias*. Of the former I took 25 species in the Abruzzi (I have taken others elsewhere in the Apennines), of which 17 were "blues," 4 "coppers," and 4 "hair-streaks"; on the other hand the *Erebias* were represented by a few worn *Erebia stygne*, and this at a height at which in Switzerland one would probably have found seven or eight species at least. The *Hesperiids* were fairly well represented, as were the *Pierids*, and, in the latter group, my most interesting discovery was made, for *Pieris ergane* is widely distributed in this part of the Apennines; I took it at Sulmona, Roccaraso, and Subiaco, though unfortunately it was only at the latter place that I became suddenly aware of the fact, otherwise I might have had specimens for some of my kind friends. The *Melitæas* were represented only by a few *Melitæa didyma*, still fewer specimens of a small, heavily-marked form of *M. phoebe*, and by numerous *M. parthenie*; the *Brenthids* only by a few worn-out *Brenthis daphne* at Scanno; but I took all the large fritillaries except *Dryas pandora*, though *Argynnis aglaia* and *A. niobe* were the only two that were even fairly common. *Vanessids* were scarce, *Euanessa antiopa* and *Polygonia egea* being the least so, but the former were unapproachable and the latter generally worn out; *Limenitis camilla* was not uncommon at Roccaraso, but I saw it nowhere else till I got to Subiaco. For most of the *Satyridae* I was perhaps too early; *Pararge megera* however was everywhere, *P. egeria* was scarce, and not of the southern form, and *P. maera* was common only at Roccaraso. I saw one *Satyrus cordula* only at Palena, *Hipparchia alcyone* being common at one spot below Villalago, and a few *H. semele* appearing at Roccaraso; the genus *Epinephele* was more in evidence, while *C. pamphilus* and *C. arcania* alone represented *Coenonympha*. *Melanargia galatea* was to be found everywhere, the lowland form having a strong tendency to obsolescence of the under-side markings, while many of the upland specimens might have come from the Vale of the White Horse, or some other English locality.

Our first destination in the Abruzzi was its capital, Aquila, but it is impossible to get there direct. The shortest way is probably by Ancona and Pescara, but the temptation of even one day in Florence was great, so leaving Charing Cross at 2.20 p.m. on the 5th, we arrived at Florence at about 11 p.m. on the 6th, remaining there for two nights. The morning of the 7th was so bright that I never thought of the possibility of rain in the afternoon, and put off my visit to my old hunting-ground at Fiesole till after lunch, but alas! I had hardly arrived when a violent thunderstorm broke out, and I had not more than five minutes of sunshine. I disturbed a few *Lycænids* in the grass and heather, but *Polyommatus escheri* on which I had reckoned, was only represented by one ♀, and *P. icarus* was the only other species taken. *Adopaea lineola* was common, as were also *Epinephele jurtina* and *Melanargia galatea*, the only other butterflies I saw were *Pieris brassicae*, *P. rapae*, and *Colias edusa*. Even from Florence it is impossible to get to Aquila in the day, the trains on the branch line being few and awkward, so our journey was again broken by spending the night at Assisi, where we arrived in time for a short hunt on the grass slope above the cemetery road where I had so often been last year. *Agriades thetis* ♂s were worn out but the ♀s were still in good condition; I was not, however, lucky enough to pick up any more specimens of the



hybrid *polonus*. *Scolitantides baton*, *Polyommatus icarus*, *Adopaea lineola* and *Thymelicus acteon* were as common as last year, and I took one *Cupido osiris (sebrus)* ♀; several of last year's species were also in evidence but nothing of special interest and nothing new. The trains from Assisi are not convenient, and, but for the pleasure of returning to the Hotel Giotto, it would really have been better to go on to the junction at Terni and spend the night there. As it was we had to wait two hours at Terni between trains. Had we known it, we had plenty of time to visit the famous falls, by driving up to them and catching our train again at Marmore just above the falls, but, as we did not know this at the time, I found a hopeful-looking lane just at the end of the platform which I followed for some distance, taking the following species: *Polyommatus icarus*, worn, *Everes alcetas*, fresh and rather large, *Pararge aegeria*, tending towards the southern form, *P. megaera*, *Erynnis alceae*, *Polygonia c-album*, all worn, and *Melanargia galatea*. It is worth while noting that there is a good buffet at Terni station, as one leaves for Aquila soon after lunch time. From all I could see, I should think that there was much good hunting-ground above Terni, especially in the neighbourhood of Marmore station, some 700ft. above Terni, which only stands a little more than 420ft. above sea level. One or two other points are passed between Terni and Aquila which look as if they might well repay a visit, but trains are very few; Piediluco, however, might easily be reached from Terni and the Sella di Corno from Aquila; the latter station is over 3000ft. above sea level.

Aquila is a very flourishing and prosperous-looking town of nearly 19000 inhabitants, situated at some 2000ft. above the sea, but the air of which reminds one more of 4000 to 5000ft. in the Alps. I really do not know what to say of the hotels. We stayed at the Albergo di Roma, where they profess to give "pension" terms, but on enquiring what they would be the landlord exclaimed with a shrug "How can I possibly tell till I see what you eat!" It turned out to be rather expensive and not very satisfactory, but I have no reason to suppose that the "Italia" or the "Sole" are different. However, entomologically, it could only be used as a centre. I have no opinion of its immediate surroundings as a hunting-ground. There is a hopeful-looking bank just below the fortress (known as the "castello") on which one could pick up odd specimens of *Erynnis althaeae*, and *E. alceae*, *Rumicia phlaeas* var. *eleus*, *Scolitantides baton*, *Polyommatus icarus*, *Chattendenia w-album* (worn out), *Pieris rapae*, *Pontia daplidice*, *Leptosis sinapis*, *Colias edusa* (very fresh), *Pyrameis cardui*, *Polygonia egea* (in rags), *Issoria lathonia*, *Epinephele jurtina* (not approaching *hispulla*), and *Coenonympha pamphilus*. These species I took on the afternoon of the 11th, but no others. On the afternoon of the 10th, we drove up to Assergi, the point of departure for the ascent of Gran Sasso d'Italia (9585ft., the highest point of the Apennines), the slopes surrounding which form, I have no doubt, admirable hunting ground. There is however no possible place to stay at in or near Assergi, and the only way to get a good day there would be to drive from Aquila in the early morning, and walk back as far as Paganica station (two miles beyond the village) from which there is a train to Aquila, the next station, in the late afternoon. My only experience of these slopes was obtained by starting to walk back directly we arrived at Assergi,

while the carriage waited for half an hour. It was getting late however, and the only species I took were, *Agriades thetis* and *Polyommatus escheri*, both worn, *P. hylas*, very fresh, *P. icarus*, *Cupido minimus* (one only), *Klugia spini*, *Pieris napi*, and *Pararge megera*. I succeeded, however, in getting so far ahead that the driver was most anxious to turn back to find me, feeling sure I must be behind, and assuring the ladies that it was "molto pericoloso" to leave me there; they, however, knowing that I was very well able to take care of myself, insisted on continuing, and eventually overtook me, nor did we ever discover in what the "great danger" consisted, though the man was evidently genuinely perturbed.

With regard to the insects taken in these two localities, the most interesting forms were certainly those of *Erynnis althaeae* and *Polyommatus escheri*. The former was small, square and compact-looking, the hindwings very dark, the forewings much lighter than in more northern specimens, giving something of the same contrast that one gets in *Erynnis lavaterae*, except that, in this case, the tint is mauve and not buff. The latter is also small, and of the blue of *hylas* rather than that of *icarus*; the one specimen I took was not so brilliant as those of Fiesole, but this may be due to its condition, which was far from fresh. The only specimen of *Cupido minimus* seen during my expedition was rather large (though not approaching the *alsoides* of the Laquinthal in size) and well spotted; it is certainly a scarce species in central and southern Italy. *Polyommatus hylas* is large, and of a very brilliant blue. The other species taken show no peculiarity.

(To be concluded).

### Early Summer amongst the Butterflies of the Rhone Valley.

By JOHN ALDERSON.

(Continued from p. 239.)

On June 9th I shifted my quarters to Martigny. The conditions were still unfavourable for collecting, and slight showers were falling at intervals as I set out about mid-day with the intention of walking under the cliffs to Vernayaz. In the fields, *Enodia hyperanthus* was in swarms, and a solitary *Rumiccia phlaeas* formed an addition to my list. A single fresh *Erebia stygne* and three worn *E. evias* were picked up on the stony slopes, and then the rain came down steadily and persistently, compelling a retreat. In the morning, a ♀ *Melitaea parthenie*, taken the previous day at Bex, had been placed in a cage with fresh sprigs of scabious and leaves of *Plantago lanceolata*. I put the cage upon the window-sill where it would catch any fleeting rays of the sun, but no ova were laid this day.

The morning of June 10th opened brightly with a clear sky, in pleasant contrast to the day preceding. I walked across the fields to Branson with the intention of working the *Colutea* patch for *Lycaena iolas*. On the roadway, just before reaching the bridge over the Rhone, I took my first specimen of *Hipparchia alcyone*. After crossing the Rhone, a single perfectly fresh *Scolitantides orion* was captured flitting about the rocks, and one or two *Issoria lathonia* were noticed hereabouts. On reaching the *Colutea* patch, I found *Lycaena iolas* flying about the bushes in the bright sunshine. Half a dozen specimens, including both sexes, and in varying condition, were captured, but the species were not very common, nor was it very easy



to net. *Lycaena arion* was not uncommon flying about the steep slopes, and showing a strong tendency to variation in the direction of var. *obscura*. I added two other species to my list in the capture of odd examples of *Argynnis adippe* and *Hipparchia semele*, both recently emerged to judge by their condition. Occasionally *Erynnis lavateræ*, *Hesperia carthami*, and *H. alveus* were noticed on the steep hillsides, and, at the blossoms of privet *Nordmannia* (*Thecla*) *ilicis*, in fine condition, was quite common. A few *Loweia alciphron* var. *gordius*, were on the wing, and *Aricia astrarche* occurred sparingly. About eleven o'clock, clouds came up rapidly and obscured the sun, which remained hidden for the remainder of the day. On patches of lucerne, between Branson village and the Rhone, large numbers of *Plebeius argus* (*aegon*) were found at rest. Three more specimens of *Scolitantides orion* were found on the rocks near Branson, their condition suggesting that they belonged to a second brood, for all were in prime condition, whereas the majority of those seen and taken in this locality on May 18th, were more or less worn, some, in fact, being very tattered specimens. One or two batches of larvæ of *Vanessa io* were seen on nettle, and one batch almost full-fed was found feeding on hop. On returning, I found that the sunshine had induced the caged ♀ *M. parthenie* to oviposit, for about 80 ova had been laid in batches along and near the midribs of the scabious leaves, but on the leaves of plantain none was laid.

The following day the outlook was again far from favourable, the sky being overcast and the temperature low, with occasional showers and a rather gusty wind. I walked under the cliffs from Martigny to Vernayaz, but saw very few insects during the journey, and before I reached Vernayaz heavy rain came on and continued for the rest of the day. The continued absence of ideal collecting weather was certainly somewhat discouraging, but, despite the unfavourable conditions, each day I kept coming across new species, and the pleasure of making their acquaintance and watching their habits was some compensation for the meagreness of the bag. On this day the new arrival was *Brenthis daphne*, a lovely insect, brightly coloured, as all the family are on the upper surface of the wings, and exhibiting on the underside a charming blend of colours, of which the rich purple suffusion of the hindwings is the most conspicuous feature. One or two *Loweia alciphron* var. *gordius* were seen, whilst occasional *Melitaea cinxia* were still to be met with flitting about the footpath. On the stony slopes a single *Erebia stygne* was taken, and *Pararge maera* was found resting on the rocks. I attempted to work the marshes for *Polyommatus amandus*, but I found only one or two, with a few each of *Coenonympha iphis*, *Melitaea dictynna* and *Augiades sylvanus*, the long grass being too wet for comfort.

The following day, June 12th, was wretched in the extreme, a blustering wind with a pelting rain prevailing all day. Early the next morning the rain was still falling, but at 9 o'clock it ceased, and although it was still dull, I set out for the walk under the cliffs to Vernayaz, for I still kept hoping for favourable conditions to test the entomological wealth of this particular locality. From 10 to 11 o'clock the sun shone brightly, and I had a busy and interesting time. In the marsh butterflies were swarming; of these, *Enodia hyperanthus*, showing signs of wear and wanting in variety, *Polyommatus amandus*, of which I

took a fair series with a good proportion of ♀s, *Coenonympha iphis*, and *Melitaea dictynna* were the commonest. One or two *Melitaea athalia* were also picked up, and *Iphiclides podalirius* was not uncommon. Other species noted were *Polyommatus icarus*, *Plebeius argus* (aegon), *Loweia doris*, *Nordmannia ilicis*, *Colias hyale*, *Pararge maera*, and *Epinephele ianira*. Quite an unexpected find at this low elevation, and an addition to the list was made in the capture of *Coenonympha satyrion*, the specimen being a ♂ in perfectly fresh condition. Another new capture was *Heodes virgaureae*, a real entomological gem, brilliant in the extreme, as it sat on a blossom with its brightly burnished wings wide-spread, and reflecting the rays of the sun. Towards Vernayaz, a few *Loweia alciphron* var. *gordius* were taken. This species is very fond of sunning itself with wide-spread wings on a bare patch of ground, and, if disturbed, it generally returns to the same spot. After eleven o'clock, when the sun disappeared, I netted very few insects, but, on the return journey, a good many species were found at rest. Amongst these were *P. amandus* and *C. iphis* on grass stems, *M. dictynna* on the same, and also on flower-heads, whilst *Aporia crataegi* was crowding on scabious flowers, from which it was easily picked off. The larvae of *Vanessa io*, in all stages of growth, were swarming on hop and nettle, the majority showing a preference for the former foodplant. A cocoon of *Dasychira fascelina* was found attached to the base of a large rock, and well-hidden by the grass, and *Arctia villica* was noticed clinging to the reeds in the marsh.

The sky was of a clear blue the next day, June 14th, with the bright sunshine tempered by a rather cool breeze. The route I took was around La Batiaz, thence through the vineyards to Martigny Bourg and La Croix, and a little distance up the valley which leads to the Col de la Forclaz. About La Batiaz, *Brenthis daphne* was fairly common, and in very fine condition, and *Parnassius apollo* was also common, but *Melitaea deione* var. *berisalensis* was not seen, although a careful and prolonged search was made for this species. *Erynnis lavaterae*, *Hesperia carthami*, and *Powellia sao* were all fairly common about the vineyard paths, whilst occasional *Loweia alciphron* var. *gordius* flew up off the pathway. *Nordmannia ilicis* was common about the brambles, and *Polyommatus icarus* and *P. hylas* were noted. Around the tower, specimens of *Hipparchia alcyone*, and *H. semele* were picked up. The vineyard paths leading to Martigny Bourg produced nothing except an occasional *P. hylas*, and two perfectly fresh *Pontia daplidice*. On nearing Martigny Bourg, a *Melitaea* flitting about the pathway was netted, and it proved to be the sought-for *berisalensis*. Hereabouts, half a dozen ♂ specimens of this species were picked up, some, unfortunately, being rather ragged, and one large-sized specimen having a wing expanse of 45mm. A few *Issoria lathonia* were also flitting about the vineyard paths, and those taken were in very good condition. The meadows in the valley did not prove so productive as I had anticipated, although I added two species to the list in single specimens of *Chrysophanus hippothoe* and *Adopaea lineola*. Amongst the species found here, the most interesting were *Argynnis adippe*, *Melitaea phoebe*, *Brenthis daphne*, and *Aricia eumedon*, all occurring sparingly; and here was also taken a solitary *Rumicia phlaeas*, one of the only two specimens of this species I met with in Switzerland.



The following day I left Martigny by an early train for Sierre, where I intended to stay for a day or two. The day was very hot and oppressive in the extreme, with the sun shining through a haze. After lunch I set out to walk through the Pfynwald to Susten. The first part of the walk through the woods to the village of Pfyn was not very productive. Occasional *Melitaea didyma* and *M. phoebe* were observed in the clearings, and one or two *Argynnis adippe* were flying about the privet blossom. A few *Agriades thetis* were picked up, including a very fine ♀ ab. *addenda*, and possibly an extended series of *A. thetis* from these clearings would be interesting, for the few specimens I took were of a good size with very bold markings. After leaving the village, *Brenthis dia* was found very commonly in a field to the right of the road, and also nearer Susten on some rough waste ground by the roadside. At the latter place I saw my first and only *Pyrameis cardui*, which was successful in eluding several attempts on my part to capture it. With another new species, *Polyommatus escheri*, I was more successful, a ♂ and a ♀, both in good condition, being netted. *Gonepteryx rhamni* was also seen, but altogether the walk had not proved very productive, and fell far short of the expectations I had formed of a district so well reputed in entomological literature.

The next day, June 16th, opened brightly, but before midday the sky became overcast, and afterwards the sun came out only at intervals. Taking the train to Salquenen, I worked upwards amongst the vineyards in the hope of meeting with *Melitaea deione* var. *beris-lensis*, but I did not find it at all commonly, and the capture of four specimens occupied a good deal of time. *Pontia daplidice* was not uncommonly met with, and was in good condition. In the meadows above the vineyards *Melitaea didyma* was fairly common, but showing signs of wear, and other species on the wing were *Melitaea phoebe*, *Colias hyale*, *Agriades thetis*, *Lycaena arion*, *Hesperia carthami*, *H. serratulae*, and *H. alveus*. Two specimens of *Polygonia c-album*, and a hibernated *Gonepteryx rhamni* were noticed, whilst ♂s of *Argynnis aglaia* and *A. adippe* were dashing wildly about. *Anthrocera transalpina* was flying fairly commonly. The wind was blowing rather strongly on these exposed slopes, and crossing over in the direction of Sierre I came across a sheltered corner where butterflies were flying abundantly. Here *Melitaea didyma* was very common, with *Brenthis daphne*, *B. dia* and *M. phoebe* in fewer numbers. I was very pleased to meet with *M. aurelia* again, though in small numbers, for I had not seen this species since I was at Sion on June 3rd. Amongst the "blues" *Agriades thetis* and *Polyommatus icarus* were common, and *Lycaena arion* was not scarce. The Argynnids, *aglaia*, *adippe*, and *niobe* var. *eris*, were dashing to and fro in numbers, the last-named species being met with for the first time. Early in the afternoon a drenching rain came on and stopped collecting for the day.

(To be continued.)

## COLEOPTERA.

EUPLECTUS KUNZEI, AUB., FROM THE NORTH OF ENGLAND.—In September of this year I had the pleasure of finding a specimen of *Euplectus kunzei*, Aub., at Gibside, county Durham. It occurred under the bark of an old fir rail-post lying in long grass, and was

probably feeding on a small blue-gray springtail (a species of *Pseudochorutes* new to the British fauna), which was present in moderate numbers. *E. kunzei*, Aub., *E. punctatus*, Mots., *E. karsteni*, Reich., *E. signatus*, Reich., *E. nanus*, Reich., *E. sanguineus*, Den., *E. piceus*, Mots., *E. minutissimus*, Aub., and *Bibloporus bicolor*, Den., are now known from the Derwent Valley.—RICHARD S. BAGNALL, F.E.S., Penshaw Lodge, Penshaw. October 11th, 1910.

NOTE ON THE OCCURRENCE OF *DRYOCÆTES AUTOGRAPHUS*, RATZ., IN THE COUNTY OF DURHAM.—Some time ago I recorded having taken a single example of *Dryocætes autographus* by sweeping from Gibside. In June of this year I found several examples under bark of small fir stumps and fallen branches in a plantation near Westgate-in-Weardale.—Id.

## VARIATION.

DARK-COLOURED LARVÆ OF *PAPILIO MACHAON*.—It may interest your readers to hear that the dark form of *Papilio machaon* larva, which I have already noticed (*Ent. Rec.*, xx., 240, 266), was very common this year in my kitchen-garden on the carrots. There were some twenty in all that my children brought me, and everyone of them was melanistic. Last year I found two or three of them on some wild carrot by the woodside a little beyond the marshes; the year before, those I examined were found in several different places. In these three years I have not found one that could be called normal as to colouring, though, in 1908, one or two were not so far removed from the normal type as all the others I have taken since then. It is, of course, impossible to ascertain for how long this modification of colouring has been going on, and what can be the reason for it in this particular locality, is a question to which I find no satisfactory answer. There can be no supposition about mimicry, or rather adaptation to environment, in this case, for the dark-coloured larva shows out clearer against the light green of the foodplant than does the greener typically coloured larva. Unless we allow that a form with obviously disadvantageous colouring may become dominant in a given geographical spot where one would least expect to find it, and this appears to be absolute nonsense, I am naturally obliged to conclude that it is a remnant of an older pigment, left here and probably elsewhere, and that the big wave of adaptation has gone on in almost every other district and has left behind it this little puddle here. I should be glad to have the views of some of your more enlightened readers on the subject.—P. A. H. MUSCHAMP, F.E.S., The Institute, Stäfa. October 3rd, 1910.

## NOTES ON COLLECTING, Etc.

UNUSUAL EMERGENCE OF *DIMORPHA VERSICOLORA*.—Last year at Strathpeffer, on August 22nd and 23rd, a friend and I found ten larvæ of *Dimorpha versicolora* on some low-growing birch. We kept these in a tin box with their foodplant and some dry moss. On September 5th following, one showed signs of pupating, and by the 27th one had disappeared into the moss, although five were afterwards found dead without having changed to pupa. It was not until



September 27th this year (1910) that the first imago (a ♀) appeared, followed by a ♂ and ♀ on October 5th and 7th, respectively, leaving still two to emerge. Is it possible that these larvæ could be from a second brood? I have not found a similar record in any book, so that I thought this incident might be unusual. The pupa were kept in a sitting-room with a fire going during the winter months. If not trespassing too freely on your valuable time, I should be greatly interested to have your opinion on the matter.—C. KENNEDY REUSS, Emmaus, Ashted, Surrey. October 10th, 1910. [The "Times of Appearance" of this species, in *A Natural History of the British Lepidoptera*, vol. iii., pp. 261-263, comprises some very interesting records and deals with the points raised by Mr. Reuss. It will be seen, among others, on p. 261, that Frosch (by error Frisch) gives details of a considerable October emergence in 1894, Kricheldorf, of another in September, 1899, Gauckler, in December, 1896, Alderson, in October, 1891, and so on. None of these observers suggest the possibility of a second-brood, but give details showing that they were all cases of retarded emergence. Perhaps our readers can give further particulars of late emerging examples of this species.—Ed.]

LARVA OF APOPESTES SPECTRUM.—Mr. Simes, at the end of his highly interesting and pleasantly written "Notes on the Lepidoptera of Brindisi" (*Ent. Rec.*, vol. xxii., p. 231), mentions finding some large Noctuid larvæ resembling those of *Hadena pisi*. I have little doubt that they were the larvæ of *Apopestes spectrum*, Esp., a species of rather southern distribution. The larva appears to feed on broom and allied plants. The moth is not so handsome as the larva, and resembles our *Mania maura* more than any other British insect. A figure will be found in Spuler's *Schmett. Europas*, pl. 54, fig. 14, and of the larva in the companion volume, *Die Raupen*, etc., pl. 38, fig. 2. There are figures in other works, but these are the only ones I have at hand.—ALFRED SICH, F.E.S., Corney House, Chiswick, Middlesex. October 18th, 1910.

NOTES FROM WIMBLEDON FOR 1910.—As a temporary resident here, I have been much interested by Mr. Millward's list of the lepidoptera of the Common (*antea*, vol. xix., p. 90) and Mr. Smallman's list of the Geometrides (vol. xx., p. 60), and I now venture to send you a list of a few species not mentioned in these papers which I have come across this season. I was away all July and, on and off, the greater part of June, so that I cannot be said to have "done" the Common at all thoroughly. The species noted are:—

ARCTIDES: *Spilosoma lubricipeda*, *S. menthastri*, both common at light and well marked. HEPIALIDES: *Hepialus hectus*, *H. lupulinus*, both taken at dusk. DREPANULIDES: *Ciliix glaucata*, common at light. NOTODONTIDES: *Leiocampa dictaeoides*, one on a fence, May 17th. NOTODONTA dromedarius, a few larvæ beaten from birch in September. CYMATOPHORIDES: *Asphalia flavicornis*, very common on lamps, and, by day, on birches. NOCTUIDES: *Triaena psi*, larvæ common; *Leucania lithargyria*, larvæ; *Hydroecia micacea*, on grassheads, September; *Xylophasia rurea*, very common at sugar, including beautiful rich dark-red forms (*alopecurus*?); *Characis graminis*, males at light; *Apamea basilinea*, at sugar; *Miana furuncula*, common at dusk; *Graphiphora augur*, one at sugar, June 17th; *Noctua brunnea*, common at sugar in June; *Citria flavago* (*cerago*), on grasses, September;

*Brotholomia meticulosa*; *Hadena pisi*, larvæ very common on bracken by day, especially during sunshine, when they rest on the upperside of the fronds, September and October; *Erastria fuscula*, one very fresh male at sugar, June 7th. GEOMETRIDES: *Nyssia hispidaria*, full-fed larvæ on oak-trunks; *Zonosoma pendularia*, common; *Acidalia remutaria*; *Hybernia leucophaearia*, very common on fences; *H. aurtiaria*, common; *Cheimatobia boreata*, very abundant; *Larentia viridaria*; *Cidaric truncata*, common; *Pelurga comitata*, a few in garden.

With regard to the species in Mr. Millward's list, I may mention that *Gonophora (Thyatira) derasa* was common at sugar in June, as was *Cymatophora duplaris* in August, the latter being, as a rule, decidedly dark. *Tapinostola fulva* was very abundant in certain spots from early September to date, chiefly of forms *concolor*, *ochracea*, *ochracea-suffusa*, and *pallida*. With regard to the species in Mr. Smallman's list of Geometrides, I have only to note the extraordinary abundance of *Cheimatobia brumata* and *Hybernia defoliaria* last winter, and the occurrence of a specimen of the latter species on September 30th last, an early date in my limited experience. I also found *Acidalia emarginata* to be common, but very localised. There is one insect in his list—*Thera juniperata*—which has, so far, defeated me. I cannot even find any juniper. I beat plenty of pupæ from junipers on Epsom Downs, which are now emerging, but that is the nearest locality I have found.—(Captain) P. A. CARDEW, 50, Melbury Gardens, Wimbledon. October 7th, 1910.

ARCTOMYSCIS EUPHORBIE VAR. MYRICÆ IN ENGLAND.—I received a pupa of this insect from my mother, which was taken on June 6th, 1910, near Falmouth. The insect, a female, emerged on June 9th. I find, on reference to Mr. South's "Moths of the British Isles," that this insect has not been reported from England before.—P. N. WHITLEY, School House, Rugby.

EUPITHECIA SUCCENTURIATA IN WARWICKSHIRE.—I have much pleasure in stating that I took a specimen in a disused brick-pit at Hillmorton, near Rugby, on June 16th, 1910. I have been unable to find larvæ on the tansy that grows there in abundance. I believe this is the first record for Warwickshire.—P. A. BUXTON, School House, Rugby.

TILIACEA CITRAGO IN KENT.—We have taken this species this autumn in numbers at sugared lime trees (and occasionally at light) in the garden, at Fairhill, Tonbridge. Barrett does not record the insect for Kent. We have also found a wing in a fives-court at Rugby—but this is not a new insect for Warwickshire.—P. A. and D. S. J. BUXTON, Fairhill, Tonbridge. October 20th, 1910.

AGRIUS CONVULVULI AT WEST WITTERING, NEAR CHICHESTER.—A very tattered and worn specimen of *Agrius convolvuli* was taken this autumn at West Wittering, by Mrs. Dumphy of that village. I cannot give the exact date. I have myself seen no—nor have I heard of any—specimens of either species of *Colias* or *Manduca atropos* in any stage. Indeed, the season for lepidoptera has never been excelled for badness in my experience. On October 4th, a beautiful day, several *Aglais urticae* and a *Pyrameis cardui* were flying over flowers in the garden.—JOSEPH ANDERSON, Alre Villa, Chichester.



## CURRENT NOTES.

The Annual Exhibition of the South London Entomological Society will take place on November 24th, at Hibernia Chambers, London Bridge, S.E., at 7.30 p.m. The Secretaries ask for information concerning exhibits in advance. Visitors kindly invited. Exhibitors are also urged to label their exhibits.

The Conversazione of the Entomological Society of London, postponed from May last to December, has again been unavoidably postponed until next year. Due notice will be given as soon as a date has been fixed for it on some day either in May or early June.

Dr. Wood describes (*Ent. Mo. Mag.*) six new species of *Phora*, viz., *P. albicaudata*, *P. spinicincta*, *P. sylvatica*, *P. hirticaudata*, *P. manicata*, and *P. hirsuta*.

Dr. Sharp describes a new species of *Laccobius* as *L. ytenensis*, recorded as occurring in the New Forest in great abundance in September, and as having been taken also in Devonshire (de la Garde), Cornwall (Champion), Padstow (Lamb).

Dr. Norman Joy and Mr. Tomlin describe a beetle new to science as *Ericinus histrio*. It appears to be widely distributed—Oxford, Southport, Bradfield, Whitbourne-on-Terne, Symond's Yat, Mathon, and West Malvern. It occurs among hay, and appears first to have been suspected by Mr. J. Collins as distinct from *E. transversus*.

Dr. Norman Joy also adds *Atheta* (*Homalota*) *picipennis*, Mannh., to the British list on the strength of specimens taken at Dalwhinnie, Invernessshire, on September, 1909, and at Aviemore in rotten fungus in September, 1910.

Mr. Richard S. Bagnall adds three species of Thysanoptera to the British fauna, viz., *Cryptothrips lata*, Uzel, *Liothrips hradeensis*, Uzel, and *Acanthothrips nodicornis*, Reuter.

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## SOCIETIES.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY.—September 8th, 1910.—BIRDS AND PUPÆ OF *NONAGRIA ARUNDINIS*.—Mr. J. P. Barrett exhibited a number of reeds from which larvæ and pupæ of *Nonagria arundinis* had been extracted by birds. COLEOPTERA.—Mr. Ashby, a series of *Anomala frischii* from the New Forest, three-fourths of which were of the beautiful blue-green aberration. RARE HOMOPTERON.—Mr. West (Greenwich), a short series of the rare Homopteron, *Oliarus leporinus*, from Holmsley, New Forest. ABERRATIONS OF LEPIDOPTERA.—Mr. Newman, long varied series of *Agrotis cinerea* from North Kent, and *Pachnobia alpina* from Rannoch, *Euchelia jacobaeae* with red markings united, a number of *Phragmatobia fuliginosa*, bred in August from Aberdeen ova laid in June, of the red southern form, and a varied series of *Amorpha populi*, including an unicolorous specimen, and one with a greenish band. DRAGONFLY CAUGHT BY DROSERA.—Mr. Step, for Mr. Bishop, a cluster of *Drosera intermedia* from Cutmill, which

had captured a dragonfly, *Agriion puella*. GYNANDROMORPHOUS BRENTHIS EUPHROSINE.—Dr. Hodgson, a gynandromorphous *Brenthis euphrosyne* from Ashdown Forest. MICRO-LEPIDOPTERA.—Mr. Sich, shells of the ova of *Coleophora niveicostella* on thyme, cases of *C. potentillae* (?), and of *C. paripennella*, and mines of the larvæ of *Cemistoma scitella* in hawthorn. LANTERN DISPLAY OF SLIDES SHOWING STRUCTURAL DETAILS OF EARLY STAGES IN LYCENIDS.—Dr. Chapman showed a series of slides illustrating various, chiefly structural, points in relation to the "blues," especially *Plebeius argus*, *Agriades coridon* and *A. thetis* (*bellargus*), their larvæ at various stages, characteristic hairs, honey-gland, etc.; pupal structure, such as the curious pocket in *P. argus* and *A. thetis*, between segments 4 and 5 of the abdomen, to receive the ends of the legs and antennæ; the male appendages, to illustrate their characteristic forms in the Plebeids; a series of specimens showing the teeth at the end of the clasp of *P. argus*, and also of a number of allied species, the former showing the great variation in these parts in *P. argus*, but quite impossible to confound with the other species where variation might be equally great, but specimens were not available for this. The specimens were all pressed quite flat so as to be readily comparable. September 22nd, 1910.—RIVIERAN AGRIADES CORIDON.—Dr. Chapman exhibited a bred series of a second-brood of *Agriades coridon* from ova laid by spring imagines taken in the Riviera. VARIATION OF MALACOSOMA NEUSTRIA.—Mr. West (Ashted), a bred series of *Malacosoma neustria*, containing a good proportion of very light and very dark forms in both sexes. DIPTERA.—Mr. Andrews, short series of the Diptera *Pegomyia setaria* and *Isopogon brevirostris* from Chattenden and Shoreham, Kent, respectively. ABERRATIONS OF LEPIDOPTERA.—Mr. Newman, a *Celastrina argiolus* ♀ with very wide black margin and spotted fringe, a *Pachnobia hyperborea* in which a radial segment of the hind-wing has the rich markings of the forewing, an orange *Arctia caia* with forewings having only a few small blotches of dark marking, several forms of *Angerona prunaria*, uniform and rich marbled, an *Adopaea lineola* with xanthic discal patches on all wings, and an *Abraxas grossulariata*, extremely pale, with only a few scattered traces of black and yellow markings. ABERRATION OF ZANCLOGNATHA GRISEALIS.—Mr. Kaye, for Mr. Percy Richards, a curious and unique specimen of the genus *Zanclognatha* with an apparent combination of the markings of both *Z. grisealis* and *Z. tarsipennalis*, but considered as being the former species. GALLS.—Mr. Step the galls of *Cynips kollari* (?) from Bookham, and compared them with *C. tinctoria* (?) brought from the Riviera by Dr. Chapman. THE MIDDLESEX HOME OF CLAUSILIA BIPPLICATA.—Mr. Sich read a paper on the above subject, and gave a description of his garden and its natural history at Chiswick as it was years ago. October 13th, 1910.—A LOCAL HOMOPTERON.—Mr. West (Greenwich) exhibited a series of the Homopteron, *Limotettix stictogala*, beaten from tamarisk at Deal. It was gradually extending its range. PHOTOGRAPHS.—Mr. Tonge, photographs of the young larvæ of *Celastrina argiolus* attacking ivy buds, and *Vanessa io* and *Pyrameis atalanta* at rest. ABERRATIONS OF LEPIDOPTERA.—Mr. Newman, melanic examples of *Bryophila perla* taken at Folkestone, a suffused pink specimen of *Anthrocera trifolii*, an example of *Spilosoma menthastris*



with joined-up spots approaching ab. *walkeri*, several *Abraxa grossulariata*, (1) black markings especially wanting on all wings, (2) yellow marking much increased in area, and black decreased, and (3) a very dark specimen, the black areas united and enlarged. PUPATION OF *COSSUS COSSUS* (LIGNIPERDA).—Mr. Adkin, a series of *Cossus cossus* (*ligniperda*) from Lewisham, and read notes on the occurrence and pupation of the species. LYONETIA CLERCKELLA.—Mr. Turner, living bred examples of *Lyonetia clerckella* and its mine in a birch leaf, with the swung silken cradle in which the larva turned to pupa. NIGERIAN BUTTERFLIES.—Mr. Moore, a variety of *Limnas chrysippus* var. *alcippus*, in which the apical white dot is duplicated, and *Acraea encedon* ab. *alcippina* from the same locality, Northern Nigeria. LARVA OF GLOW-WORM.—Mr. Main, newly-hatched larvæ of the glow-worm. ABERRATIONS OF LEPIDOPTERA.—Dr. Hodgson, an example of *Callophrys rubi* with xanthic areas on the disc of all the wings, specimens of *Nemeobius lucina*, (1) ♀ in which the yellow area was much increased at the expense of the black, (2) a ♂ in which the opposite was very strongly marked, a black example of *Anthrocera trifolii*, the only one obtained this year, and one with extreme red suffusion. EGGS OF *PLEBEIUS ARGUS* (ÆGON) LAID WILD.—Mr. Rayward, ova of *Plebeius argus* (*aegon*) laid naturally on *Erica cinerea*. SICILIAN LEPIDOPTERA.—Dr. Chapman, lepidoptera obtained by him in Sicily, *Oreopsyche kahri*, *Depressaria thapsiella*, *D. ferulae*, etc. BRAZILIAN BUTTERFLIES.—Mr. Kaye, a box of Brazilian butterflies taken by him in the early part of the year, including *Morpho anaxibia*, *M. menelaus*, *M. hercules*, *M. laertes*, *M. aega*, and the rare *M. cytheris*, the beautiful *Papilio ascanius*, five species of *Heliconius*, species of *Catagramma* and *Callicore*, numerous very beautiful *Erycinidae*, the Ithomiine *Mechanitis lysimnia* with its Pierine mimic, *Dismorphia astyoche*, caught on the same flower-heads at Castro. MICROLEPIDOPTERA.—Mr. Sich, specimens of *Monopis weaverella*, a rare species only recently fully differentiated from *M. spilotella*. He also showed the hybernaculum of *Yponomeuta cognatellus* on *Euonymus* twigs. SICILIAN BUTTERFLIES.—Mr. Platt Barrett, a large collection of butterflies taken in Sicily during the last two years, and read a paper on the exhibit and the localities he visited, illustrating his remarks by a large number of lantern slides, including a series of views of Messina before and after the earthquake, of which he and his son were among the survivors.

ENTOMOLOGICAL SOCIETY OF LONDON.—October 19th, 1910.—OBITUARY.—The decease was announced of Mr. Oliver C. Goldthwait, a Fellow of the Society. ABNORMAL BEETLES.—Mr. A. M. Lea sent for exhibition two interesting examples of *Lissotes* beetles, which he had presented to the British Museum (Natural History) Teratological Collection; *L. curvicornis*, Ber., var. 3, with an additional leg jutting out from the left front coxa; and *L. punctatus*, Lea, a hermaphrodite having the left side ♂ and the right ♀. NEW BRITISH BRACONID.—Mr. H. St. J. Donisthorpe exhibited a Braconid new to Britain, *Helcon ruspator*, taken at Cannock Chase on July 16th last, in a cell of *Strangalia 4-fasciata* in a fallen birch tree, and an example of the host captured at the same time. He pointed out that this very fine addition to the British list is recorded as parasitic on the same beetle

on the continent. NEW FORMS OF *MELITÆA AURINIA*.—Mr. P. J. Barraud showed examples of two new forms of *Melitæa aurinia* from Italy: (a) var. *aurunca*, Turati, from the Aurunci mountains, southern central Italy, first discovered in May, 1909, by Signore Orazio Querci, of Formia, and named by Count Turati of Milan. The most striking feature is the wide black median band on the upperside, contrasting with a rather pale ground colour. (b) var. *comacina*, Turati, from above Como, north Italy—the examples given to the exhibitor by Count Turati. SUMMER BUTTERFLIES FROM ALGERIA.—Mr. A. E. Gibbs exhibited a case of butterflies containing a representative collection of the 28 species met with by him at Blidah and Hammam R'Irha, etc., during an entomological excursion to Algeria made at the end of May and the beginning of June this year. The weather was extremely bad throughout, being cold, wet and windy; the most interesting species taken in the first-mentioned locality were *Euchloë eupheno* and *Coenonympha arcanioides*; in the latter *Dryas pandora*, *Melitæa aetheria* var. *algerica*; and at Lalla Maglinia, on the Moroccan frontier, *Adopæa hamza*. BRITISH ANTHROCERIDS.—The Hon. N. C. Rothschild exhibited a number of Anthrocerids captured in Great Britain, and called attention to some remarkable specimens secured at Ashton Wold, Oundle, which belonged to the form known as *Anthrocera hippocrepidis*, Stphs. The exhibitor also showed some enormous specimens of *A. filipendulæ* from the same locality, and pointed out that this large race had apparently exterminated *A. hippocrepidis*, Stphs., in a locality where that species had only recently appeared. Commenting on Mr. Rothschild's exhibits, Mr. J. W. Tutt said that *Anthrocera hippocrepidis*, Stphs., was the most elusive and least known of the British species of the group. It bore certain superficial resemblances to *Anthrocera trifolii-minor* and *A. filipendulæ*, the ♂s particularly being prone to smaller size and five-spottedness, by losing the sixth (lower outer) spot on the upper side, the ♀s larger and, in the most developed specimens, strongly six-spotted, and scarcely, if at all, different superficially from *A. filipendulæ*. Like Mr. Rothschild, he also found the insect confined to rough pastures, and also with a tendency to die out in one spot and appear in a similar at no great distance. It was usually on the wing in June, early or late, according to season, but, in the same season well ahead of *A. filipendulæ*. He had already written up details of its life-history and habits in *A. Nat. Hist. Brit. Lep.*, vol. i., pp. 532-538. The two other sets of Anthrocerids exhibited by Mr. Rothschild he thought were *A. filipendulæ*. Dr. Bateson had examined the ♂ genitalia and pronounced *A. hippocrepidis* as being nearer *A. filipendulæ* than *A. trifolii*. VARIATION IN *MELLINIA OCELLARIS*.—Mr. E. D. Nevinson showed bred series of *Mellinia ocellaris*, developing three distinct aberrant forms, and examples of *M. fulvago* and *M. gilvago* for comparison, the exhibit demonstrating the apparent transition from one species to the other through the typical and variant forms. The only other series bred from British ova by Mr. Mills in 1908 displayed no variation of any kind, and were all typical specimens.



### The recent "Raynor" sale of *Abraxas grossulariata*.

By a curious coincidence the "Magpies" sold by Mr. Stevens at his Auction Rooms, on October 25th, last were almost equal in number and value to those of the same owner sold three years previously. In 1907 the produce of 172 specimens was £199, and in the present year 221 specimens realised £192, the average value of each moth thus working out at something like a sovereign. There was, however, this difference between the two sales, *viz.*, that in the earlier one several of the specimens were reared by other collectors, notably *varleyata*, *chalcobares* and *melanozona*, whereas this time every specimen without exception was reared and set by Mr. Raynor himself. The setting and condition of the insects were above reproach, and, although some entomologists present considered they were not quite so large as the previous ones, we ourselves thought them by no means lacking in this respect, allowing for the fact that there were on this occasion more representatives of the second brood which naturally runs smaller.

There was a remarkably good attendance at the sale, although the actual number of bidders was not very large. No doubt the "big men" frightened off some of the "smaller fry," and, as in other sales, a good many collectors, being unable to appear in person, availed themselves of the services of certain dealers. It seemed to be a recognised fact that there were three insects of outstanding merit, namely Lot 68, "a magnificent *gloriosa*, with three-fourths of the forewings solid black and chocolate intermixed," for which six guineas were paid, Lot 81, "a wonderful female, combining *nigricostata* with *lacteasparsa*," which fetched £11, and Lot 82, evidently of the same ancestry, being an "extraordinary female, with darkened costa, but few markings on any wings," which realised £7 5s. Had we been offered the pick of this trio, we almost think our choice would have fallen on the first of the three, *i.e.*, on Lot 68, which was "glorious" indeed, both in size and markings, although no one could fail to covet the other two for which more was paid. Here we may remark "en parenthèse," that £11, although easily a record for the species, is not the highest price ever paid for a moth, as, unless our memory errs, a certain *Arctia caia* was once knocked down for £14 14s.

There were exactly 100 lots of *lacticolor* and its offshoots, and 102 of *grossulariata* and its aberrant forms. Among the former, Lot 73, "a large fulvous *nigricostata*, with suffused markings," made £3 10s., and "a dark bronze male *iochalca*" (Lot 62), £2 12s. 6d., by no means an out-of-the-way price for so fine an insect. In fact, all the seventeen specimens of *ab. iochalca* fetched only moderate prices, but we thought the twelve *centralipuncta* did fairly well. This lately-named aberration reminds us greatly of *ab. melanozona*, in so far as the discal spot is much enlarged and stands out quite clear of all the other dark markings. It is a beautiful and distinct form.

The prices paid for *ab. chrysostrata* were not unduly high, for the golden sheen pervading the ground-colour is really very beautiful. Therefore £1 10s. spent on the purchase of Lot 41, belonging to this form, but with violaceous hindwings, was by no means a bad investment.

Of the 102 *grossulariata* lots, those containing the *abs. lutea* and  
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*flavipalliata* were the most conspicuous and attractive, twelve specimens of the latter costing their purchasers £13 2s. and nineteen of the former £27.

The ab. *flavipalliata* is a beautiful thing, with broad yellow mantle traversing the forewings, of which the outer-marginal portion is much darkened. The two best specimens of this were females, and, possessing in addition strongly fasciated hindwings, they realised £3, and £2 15s. respectively. The *lutea* were indeed a wondrous group, ranging through almost every possible shade of yellow. The one to attract most attention was Lot 173, "an extraordinary iridescent female," £3 5s., and "a bright orange female" (Lot 165), £2 15s., although perhaps two others which fetched £1 17s. 6d. a piece, were equally good, viz., "a dark yellow female with fasciated hindwings" (Lot 164), and "a male with old-gold forewings, and violaceous hindwings" (Lot 168).

In contrast with these fairly high sums of money were the prices given for abs. *hazeleighensis* and *nigrosarsata*, which perhaps may be accounted for by the fact that they occur more commonly in the North than southern collectors are aware of; but even so, 6s. seems very little for Lot 110, "a superb female, with no white whatever in dark median area," from Huddersfield. A fine "sooty female *nigrosarsata*" from Hazeleigh fetched but £1, and the two *nigrocaerulea*, with distinct bluish lustre, probably a very rare form, were appraised at £1 15s. and £2 respectively.

Of the 202 lots included in this sale 30 were printed in italics, and, as we believe the catalogue was compiled by the vendor himself, it may be taken for granted that these were the best forms reared by him, and such as he himself deemed to be most unusual and therefore of the greatest value. Yet among them all, were no representatives of such forms as *melanozona*, *subriolacea*, *semiviolacea*, *chalcobares*, *albo-marginata*, and others which appeared in the 1907 sale, thus proving that really extreme aberrations only turn up every now and then, so that if the prices they produce seem unduly high, they are not really so, for in every department of art and science, specimens of which there is no regular visible supply are only too eagerly snapped up by wealthy connoisseurs.

### Coleoptera in the Isle of Wight.

By J. TAYLOR.

Owing to the bad weather, and still more to the fact that no good coleopterist spent more than a few days in the Island last summer, there are very few interesting captures to record. Sweeping in particular was most unproductive, as perhaps was only to be expected. During the fine weather of September and early October things were much better, and beetles were fairly abundant.

The following species with asterisk are additions to the Isle of Wight list:—\**Oxygaster umbrata*, Gyll.—Whitefield Woods (Donisthorpe). \**Ischnoglossa proluxa*, Gr.—Whitefield Woods (Donisthorpe). \**Bolitobius lunulatus*, L.—Whitefield Woods and Parkhurst Forest (Donisthorpe). \**Philonthus quisquiliarius*, Gyll., var. *dimidiatus*, Er.—On wet mud in a ditch, Sandown (Taylor). \**Stiliculus orbiculatus*, Pk.—In flood refuse, Burnt House, near Sandown, January 7th (Taylor). \**Chilocorus similis*, Ross.—Sweet in Whitefield Woods, pupae



also found on leaves (Donisthorpe). \**Cis pygmaeus*, Marsh.—In fungus, Morton, near Brading (Taylor). \**Apteropeda orbiculata*, Marsh.—Whitefield Woods (Taylor). \**Gymnetron beccabungae*, L.—Sandown marshes (Taylor). \**Rhyncolus lignarius*, Marsh.—In dead elm, Sandown (Taylor). \**Maydalis pruni*, L.—Sandown (Taylor). \**Cissophagus hederæ*, Scm.—Beaten from old ivy, Bordwood, near Sandown (Taylor).

*Homalium gracilicorne*, Fair., was taken by Mr. Donisthorpe in Whitefield Woods; this is only the second specimen recorded from the Isle of Wight. He also took a single *Lesteva pubescens*, Mann., in moss from the waterfall at Luccombe Chine in May. It would be interesting to know if this is the first true *pubescens* has been found in the Island; all that I know of taken here lately and assumed to be that species have proved to be the recently separated *L. fontinalis*, Kies:

I swept *Longitarsus flavicornis*, Stephs., in numbers from a fine lot of its food-plant, *Convolvulus sepium*, growing at the edge of a marsh at Bordwood; the only previous Island record was one specimen taken by Professor Beare in 1909. *Ballota nigra* grows plentifully by the roadside near Yarbridge, for a distance of 200 yards or more, and the leaves of nearly every plant are completely riddled by *Longitarsus ballotæ*, Marsh. There are now (November 22nd) still many beetles on the plants.

A number of *Chaetocnema hortensis* were captured on suspicion in Whitefield Woods, but only two turned out to be the new species *C. arida*, Fond. Eight specimens of *Aphodius porcus*, F., were taken in horse-dung on a road near Newchurch, in October, and *Coeliodes exiguus*, Ol., was fairly plentiful there in September.

On September 1st, a warm, still day, beetles were swarming in great numbers in the streets and neighbourhood of Sandown, and it was impossible to walk in the High Street without crushing some at every step. The majority seemed to be common *Philonthi*, *P. laminatus*, *P. politus*, *P. varius*, etc., and *Hypera punctata*, though there were, of course, many others. I have seen beetles swarming on pavements and roads before, but never in such numbers, or over so large an area.

## A contribution to the fauna of Syria.

By P. P. GRAVES.

In 1907, I visited Syria, but was unable to devote much time to collecting. However, I had one or two good days, and would have been more inclined to look back with pleasure to my trip had not a number of my specimens been destroyed on my return to Cairo by an invasion of ants. To mention the most salient points, I collected at Zebedani and Bludan, in the Anti-Lebanon, at heights of from 3500ft. to 6000ft., finding butterflies numerous between July 9th and 13th. The *Melitææ* were over, and *Dryas pandora*, very large and numerous, was the only fritillary I saw. *Epinephela lycaon* was common—a small form—and I found ♀s of *E. janira* here and there. The two most conspicuous Satyrids were *Pararge roxelana* and *Hipparchia pelopea*. Their habits were very different, the former species haunted the lanes shaded by abundant fruit-trees and planes, and bordered by thick hedges of *Paliurus australis*, bramble, and dog-rose. It flew in a heavy and leisurely fashion, constantly diving

under the lower branches of bushes and worming its way through interstices in the hedges. It only rose in the air when much pressed, either by the net or by pugnacious specimens of *D. pandora*. It was in very bad condition indeed. *H. pelopea*, on the other hand, flew on open ground, perching on the soil or on rocks, rarely on flowers, and going off wildly when disturbed. *H. anthe* also occurred here, and I took a pair of *Satyrus actaea* var. *hadjina* (?), which were both much worn, on an outcrop of white limestone above the village of Bludan. I tried the mountain immediately above Bludan up to the summit—about 6000ft. up—but got very little, everything being burnt up by heat. *Thecla myrtale*, *Plebeius* (? ?) *panagaea*, and *Polyommatus icarus* with *H. anthe*, and *H. pelopea* being all I got. There were no trees, as at Ain Zahalta, The Cedars, and other high localities to keep the moisture in the ground, and the loose, stony slopes bore little vegetation.

Of the butterflies noticed around Bludan, *Celastrina argiolus* was far the most common. Every bush or tree of the *Palurus* was frequented by several specimens. I took two males of *Tarucus balkanica* near Zebedani station, where I also saw *Chrysophanus thersamon*. *Hirsutina admetus* var. *ripartii* was common to over 5000ft.; it seems a pretty wide-spread insect on the higher ranges. I have taken or seen specimens from Afka, Jebel Sannin, The Cedars of Lebanon, The Cedar Mountains (up to 9500ft.), Ain Zahalta, and Bludan. At Beirût, in July, I had little time to collect, and was unlucky in my attempts to find new ground. The "Dog River" glen was good as ever. *Leptosia sinapis* was out there as usual in small numbers and fresh, and I got specimens of *Chapra mathias*, *Gegenes nostradamus*, and *Baoris zelleri*—the latter, as usual, in damp, shady spots. It seemed rare. At Aleih, in late July, I found only one place where insects were at all common, viz., on a slope above the station covered with trees and bushes. Otherwise the ground was unproductive, having been cleared of scrub by the builders of "eligible summer residences" for tired Beirutis, and being as baked as any desert. On this small patch of scrub I took small *Limenitis camilla* and *Satyrus hermione* var. *syriaca*, *Epinephele lycaon*, and a few of the commoner "blues," *Aricia astrarche*, *P. icarus*, and *Lampides boeticus*.

During the last few days of July, the first three days of August, and August 10th, I was at Ain Zahalta. *Satyrus fatua* var. *sichaea*, a splendid specimen, was taken on the pine-trees near the village with *S. hermione* var. *syriaca*. *E. lycaon*, a fairly large form, occurred in plenty with *Coenonympha pamphilus* var. *thyrades*. Staudinger's description in his catalogue, viz., "alis posterioribus supra subtusque 8-4 ocellis parvis nigris vel albo-pupillatis," seems to me to apply well to nearly all the *C. pamphilus* of either brood that I have come across in Syria, only the pupils of these eyespots are not so much white as of a pale dull silvery colour.

I found the cedars on the Jebel Zahalta (6000-6800ft. circ.) less productive than on former occasions. I took there the usual mountain insects, *Aricia anteros* var. *crassipuncta*, *Thecla myrtale*, *E. lycaon* var. *libanotica*, and *Hipparchia pelopea*. At the summit (circ. 7800ft.) I took a good *Papilio machaon*. A more interesting species was a form of *Chrysophanus thetis*, which I had previously supposed to be *C. ochimus*. It differs from the type in having some of the black spots on the



underside of the forewings, and every spot on the underside of hindwings obsolete. To judge from the Brit. Mus. examples, and from my limited observations, the form which occurs at and near the Cedars of Lebanon (6400ft.), to be distinguished from the Ain Zahalta cedars, is much nearer the type from Asia Minor, Greece, etc. The Ain Zahalta (mountain) form occurs on sandstone. It is geographically separated from the N. Lebanon form by some miles of treeless mountain, which forms the Kineisa ridge, where it does not seem to occur. It is not known whether it occurs on the next big mountain mass, the Jebel Sannin (circ. 9000ft.). At the Cedars it is found on limestone thinly covered with alluvial glacial deposit. I propose the following name and description for the Ain Zahalta form:—

*Chrysophanus thetis* var. *zahaltensis*, nov. var.—Upperside as in type. Underside of forewings with fainter spotting, notably towards outer margin. Spots on underside of hindwings obsolete. Marginal orange marking faint. Ain Zahalta Cedars. Males only taken. July 17th-23rd, 1904, and July 28th-August 10th, 1907.

I searched in vain for females of this beautiful insect. In August I saw one, "calling" males, perched with outspread wings on a rocky ledge. The ground did not permit me to net her. Of other insects I took *Scolitantides baton* and *Loweia dorilis* var. *orientalis* in single damaged examples. *Plebeius lowei* was not uncommon, but the females only were in the best condition. A nice skipper, which Mr. Tutt believes to be a form of *Hesperia alceus*, occurred here and there, and I took three specimens of *Plebeius zephyrus* var. *nicholli* of an obvious second brood or partial second brood on August 10th. They were less heavily marked, with reddish orange on the margin of the upperside of the hindwings, than my May and early June specimens. A single specimen of *Gonepteryx rhamni*, taken near the summit, was interesting, this species being rare on the west slope of the Lebanon. I did not collect after August 10th, but on August 27th, when returning from a journey to the borders of the forbidden Hedjaz, saw *Idmais fausta* at Amman (Rabbath-Ammon), east of the Jordan, at about 3500ft. above sea-level.

[Here I may note that I had always regarded *Pontia daplidice* as rare in Egypt. In mid-June, 1908, I saw quite a number of specimens, with some *P. glaucome*, in a garden of the Egyptian Army Hospital at Abbassieh, Cairo, and at the end of June I saw scores flying in the desert and half-cultivated ground near the stations from a point some ten miles east of Zagazig to nearly as far as Ismailia. I, alas, was in a slow and stifling train, and, though I recognised, yet could not catch them.]

(To be continued.)

### The South London Entomological Society.

The South London Entomological Society held its usual Annual Exhibition Meeting at Hibernia Chambers on November 24th. The President Mr. W. J. Kaye, F.E.S., was in the chair, and the proceedings commenced punctually at 7.30 p.m.

Successful as ever, the South London fairly eclipsed itself on this occasion, and this was mainly due to the energetic Secretaries, Messrs. S. Edwards, F.E.S., F.Z.S., and Henry J. Turner, F.E.S., and the enthusiasm of the members and their friends. A most educative,

interesting and enjoyable evening was spent and, the time passed all too quickly. No fewer than one hundred and two members and friends were present, a good proportion exhibiting.

The Rev. F. D. Morice, M.A., F.E.S., very kindly attended and showed a collection of Hymenoptera (excepting the bees) typical of all the European groups and including rare species from the Sudan and Algeria. He gave a short address on the habits and characteristics of the more prominent species.

Mr. A. E. Tonge, F.E.S., was again to the fore with photographs of eggs of lepidoptera, enlarged 30 diameters, their excellence being quite up to the high standard we expect of his work. These were generally and deservedly admired. He also showed a series of *Cosmotriche potatoria* bred from larvæ taken at Deal, 1910; *Brenthis euphrosyne* and *Boarmia repandata* var. *conversaria* ♀, bred from larvæ taken in the New Forest. Also aberrations of *Agrotis exclamationis* from Southwold and Reigate.

Messrs. A. Harrison, F.E.S., and Hugh Main, B.Sc., F.E.S., exhibited fine series of local races of *Boarmia repandata*, from York, Delamere Forest, Devonshire, Lancashire, N. Wales and Ireland.

Mr. R. Adkin, F.E.S., *Polyommatus icarus* from Eastbourne, taken in May, 1910, and some hybrids of *Biston hirtaria* ♀ × *Nyssia zonaria*, ♂, including a ♀ showing a tendency to combine the two species in wing development.

Mr. Percy Bright, F.E.S., of Bournemouth, showed a large number of very fine aberrations of *Abraas grossulariata*, including one specimen that combined the characters of ab. *lutea* and ab. *nigrosparvata*. These were bred mostly by Raynor, Harwood and Newman. Also some aberrations of *Polygonia c-album* of pale straw ground colour, bred this year from Wye Valley larvæ; and an interesting aberration of *Pachnobia alpina* showing a recurrence of the forewing marking on the left hindwing. In addition a *Lycænid* described as having the underside of *Polyommatus icarus*, but the upperside and antennæ similar to those of *Agriades thetis*, showing no black striations in the fringes, taken by Mr. Newman at Folkestone this year, and supposed by him to be a natural hybrid between *P. icarus* and *A. thetis*, but which, it has also been suggested, may be a small ab. of *A. thetis* ab. *hyacinthus*, Lewin.

Mr. H. M. Edelsten, F.E.S., showed *Leucania l-album*, and an excellent series of *Meliana flammea*, and *Luperina luteago* var. *barrettii*. Dr. G. Hodgson, various lepidoptera arranged in pairs to show parallel divergences from type. Mr. T. L. Barnett, of Greenwich, an example of *Aegeria andreniformis*, taken at Greenhithe, Kent, and also a specimen of *Aegeria culiciformis* from Darent.

Mr. Newman, F.E.S., of Bexley, bred hybrids of *Smerinthus ocellatus* ♂ × *Amorpha populi* ♀; bred melanic examples of *Ennomos alniaria*, and also some very beautiful drawings of aberrations of various insects bred by the exhibitor, including a large number of aberrations of *Dryas paphia*, now in the possession of Mr. P. Bright.

Mr. A. Sich, F.E.S., showed some interesting Tineids, including *Tinea fulcrimitrella*, *T. picarella*, *T. merdella*, *T. caprimulgella*, and *T. confusella*, and Mr. West his collection of British Homoptera including many rare and local species.

Mr. R. South, F.E.S., exhibited a considerable number of forms of the genus *Luperina*, including *L. guenéei*, *L. testacea*, and the form ab.



*baxteri*; and made remarks on the probable correct identification of the specimens. He also showed a bred series of *Phibalapteryx lapidata*.

Among the exhibits of Palearctic lepidoptera, was that of Mr. W. G. Sheldon, F.E.S., who brought up two drawers containing fine examples of *Limenitis populi*, *Neptis lucilla* and *N. aceris*, together with *Apaturids* from Herculesbad and other continental localities.

Mr. J. P. Barrett, 50 to 60 *Melanargia pherusa*, very varied, from Mount Etna and Syracuse; also *Melanargia* var. *procida* from Messina and Monte Cicci—the darkest forms being taken near Messina; also some very rare forms of *Amorpha populi* ♂. Besides these were shown aberrations of *Vanessa io*.

Dr. Chapman, M.D., F.E.S., F.Z.S., exhibited local forms of *Pararge egeria*, from Britain, the Pyrenees, Riviera, N.W. Spain, and S.W. France.

Mr. A. E. Gibbs, F.E.S., *Papilio machaon* from Japan, Pyrenees, Saxony, The Alps, etc. Mr. Hugh Main, on behalf of two German collectors, a series of forms of various species of *Vanessids* from the province of Yenesei, Siberia; among them being aberrations of *Euvanessa antiopa*, *Vanessa io*, and *Aglais urticae* similar to those that have been produced by temperature experiments.

Mr. Herbert E. Page, F.E.S., a long series of *Coenonympha dorus*, taken at Digne, Basses Alpes, on July 24th, 1910, on which date they were just emerging; and also a series of *Polyommatus escheri* from Abriès, Hautes Alpes, August, 1910.

Mr. W. J. Lucas, F.E.S., exhibited an English trap-door spider and nest, taken in the New Forest, and a huge stick insect from Toowoomba, Queensland. Also specimens of *Colias philodice*, *Pieris scudderi*, *Euvanessa antiopa*, and *Anosia plexippus*, taken by one of his boy scouts who accompanied Sir Hy. Baden-Powell to Toronto, Ontario.

Mr. S. Edwards, F.E.S., F.Z.S., exhibited numerous species of lepidoptera from W. Africa, in which sexual dimorphism is very strongly developed, chiefly of the genus *Cymothoe*.—R. E. P.

### Three weeks in the Abruzzi.

By GEORGE WHEELER, M.A., F.Z.S., F.E.S.

(Concluded from p. 258).

On the 12th, we went on to Sulmona, the terminus of the branch line from Terni and the junction of the lines from Rome, Naples and Castellamare on the Adriatic, and consequently a favourable place from which to make excursions if one stays long enough. Here also is a good buffet at the station, but the "hotels" are very primitive. The Monzù, at which we stayed, is certainly the best. One enters into a sort of covered court paved with cobbles, from which the *salle-à-manger* opens on the left and the kitchen (into which one is invited in order to choose one's dinner straight out of the pots and pans), in front, a stone stair-case ascending to the right of the kitchen door. The bed-rooms have at least the merit of size. The food is simple, but excellently cooked and cheap; here also one pays according to what one eats, but we found our bills, everything included, only amounted to about 5fr. 50c. a day per head. There is a tram from the station to the town, and unless one has a quantity of luggage it is well to wait for it if it has not arrived, rather than be inveigled into

taking a carriage. Sulmona is only some 1300ft. above the sea level, and is built in a plain cultivated almost to the last square yard. By crossing the stream by the high bridge just below the town and taking the cart track to the right down a long narrow lane, it is possible to arrive at the other side of the valley, where to the right are some rough meadows which contain nearly everything in the way of butterflies that is likely to be found. As I was anxious to see what might be found on the mountain-side I dragged myself far up over loose stones on a very steep hill-side, so rough and steep that one fell, even with nailed boots, with unpleasant frequency, and after the first 200 feet or so, by far the least steep part of the climb, there was really nothing to be had. It was, in a literal sense, the most heart-breaking day's hunting I have done for years and with the most miserable results, for practically everything I took I could have got equally well with next to no trouble beyond the walk across the valley. It was here that I took my first *Pieris ergane*, but as I did not at the time realize the fact, it will be better to put off description of it till I arrive at Subiaco, where I really made its acquaintance. In crossing the valley the only species I observed were *Pieris brassicae*, *P. rapae* and *Pararge megaera*, at the side of the road, *Iphiclides podalirius*, in great abundance in the gardens at both sides, but rarely coming within reach, and when taken always ragged, and *Everes alcetas*, which occasionally settled on a leaf of maize within reach of the net; but on reaching the rough, half-cultivated ground at the beginning of the ascent a good many species occurred, viz., *Colias edusa*, *C. hyale*, *Gonepteryx cleopatra*, *Papilio machaon*, *Scolitantides baton*, *Rumicia phlaeas* var. *eleus*, *Klugia spini*, *Euvanessa antiopa*, very fresh, *Pyrameis atalanta*, *Melitaea didyma*, *Epinephele ida*, *Erynnis lavaterae*, *E. alcaeus* and *Melanargia galatea*: all of these except *E. lavaterae* I met with before the steep ascent over rough loose stones began, but in no part was pursuit possible. In returning I followed the dry bed of the water-course right into the valley, obtaining at the lower part of it *Thymelicus acteon* and *Adopoea lineola*, and eventually finding myself in a small triangular meadow without hedges, where I found *Polyommatus icarus* and *Aricia astrarche* in abundance as well as *Pieris napi*, my one Sulmona specimen of *P. ergane*, a ♀, *Leptostia sinapis*, and most of the species I had seen further up, and I have no doubt I could easily have found more specimens of *P. ergane* if I had been quick enough to realize what I had got. I was however, by that time suffering from extreme thirst and fatigue, and knew that I must traverse the whole valley again before rest or refreshment could be found. Most of these species taken were in good condition, but *P. napi* was very worn, though evidently of the second brood, large and pronouncedly of the *napaeae* form. *Aricia astrarche* was a small form with largish orange spots reaching almost to the costa of both wings on the upperside, in both sexes, but only forming a band on the hindwing of the ♀, whereas on the underside the band was continuous except on the hindwing of the ♂, where it was slightly broken, but was broader in the ♀ than the ♂. *Gonepteryx cleopatra* was considerably smaller than those of the Riviera, *Iphiclides podalirius* on the other hand was somewhat large. *Melitaea didyma* was also rather large, the ♀s rather pale and lightly spotted, the ♂s also slightly paler than is usual in Switzerland, but quite as strongly spotted as the



general run of Swiss specimens. *Polyommatus icarus* varied a good deal; the ♂s were all of a deep rich blue, but while some were strongly spotted round the border of the hindwing, others showed no trace of spots whatever, the ♀s were universally without blue on the upperside, and had without exception a border of orange spots on all the wings. This was in fact characteristic of the ♀ *icarus* in all localities visited, so I shall not refer to it again. The underside of the ♂s varied much in ground colour, some being of a pale grey and others of the rich golden-brown shade, which is frequent in Central and Southern Italy; they showed also, as elsewhere in the Apennines, a distinct tendency towards the *iphis* and *icarinus* forms. Both sexes varied greatly in size, especially the ♂s. I have already mentioned the tendency of *Melanargia galatea* towards the *galene* form; the only other species in any way remarkable was the single specimen of *Erynnis lavaterae*, which has the forewings of a pale whitey-brown, contrasting even more strongly with the dark hindwings than is usual among the Swiss specimens, and differing widely from the North Italian examples, e.g., from Iselle and Varzo, in which the fore-and hindwings are of nearly the same shade.

On the 14th we went for one night to the mountain village of Scanno, reached by diligence from Anversa, the second station from Sulmona on the line to Rome. The diligence now leaves Anversa station after the arrival of the 9.43 train, which leaves Sulmona at 9.18, and it is well to secure seats beforehand, by writing or telegraphing to the station-master. The village of Anversa is about three miles from the station, and from this point a diligent entomologist should certainly walk the remaining ten miles to Scanno, for it is excellent hunting ground, with the exception of the only steep piece of the road, namely the piece immediately below Villalago. It is, moreover, in the lower part a magnificent, and in the upper part a lovely, road, though it must be admitted that those writers who tell us that the gorge of the Sagittario compares favourably with the Gondo Gorge, are guilty of serious exaggeration. Scanno itself is a place of extraordinary interest for the sake of its inhabitants, and is as yet thoroughly unspoilt. The new hotel, the Albergo della Pace, is said to be very comfortable, but not knowing of its existence, we had arranged to go to the primitive Albergo del Lago, which was quite passable and with very good cooking; the bill for three of us for a 24 hour's stay amounted only to fr. 18:20! I am told that the landlord speaks English, but we did not test his capacity, as we were universally supposed in the Abruzzi, and indeed at Subiaco also, to be French—I have no notion why; at Assisi last year the peasants insisted that I was Bavarian!—Had they said "Bohemian" I should have been less surprised. We arrived at Scanno in time to get some luncheon, after which I took the path above the village on the right bank of the stream where I took the following species: *Agriades bellargus*, one only, worn, *A. coridon*, just coming out, *Polyommatus icarus*, common, but worn, *P. hylas*, worn, *Plebeius argus* (*aegon*), one of the ♀s with blue on the left side only, but not gynandromorphous, *P. argyrognomon*, worn, *Celastrina argiolus*, *Klugia spini*, *Aporia crataegi*, mostly fresh, *Pieris napi*, worn out, *P. rapae*, *Colias edusa*, *Brenthis daphne*, quite in rags, *Epinephele lycaon*, very fresh. It was getting late, however, and it was also evident that I should have been at Scanno some days sooner, even though it is

situated at a height of nearly 3,400ft., but in that case it would have been necessary to remain longer, as some of the species taken the following day on the way down were only just coming out. I started immediately after breakfast on the 15th to walk down, hoping to arrive at Anversa before the diligence caught me up. There was, however, so much on the wing that I only succeeded in getting just beyond the little lake below Villalago (if anything so small may be called a lake) and even then had only acquired a very superficial idea of the entomological products of the valley. Just below Scanno, the road-side was almost exclusively in possession of the Pierids, though a few *E. lycaon* and *P. megaera* were also to be seen; all, however, except *E. lycaon* were quite *passés*, though I succeeded in finding a few *P. napi* good enough to keep. As one advanced to the edge of the Lago di Scanno, about 3,000ft. altitude, a few other species became common, particularly *Pararge egeria*, *Coenonympha arcania*, *Celastrina argiolus*, and *Klugia spini*; *Euxanessa antiopa* was also noticed, as well as *Aglais urticae*, *Colias edusa*, and *Iphiclides podalirius*. I also secured a beautiful ♀ aberration of *Pararge maera* with no dark markings on the disc of the forewing and one specimen of *Nordmannia acaciae* was taken on a bramble just at the far end of the lake. A little further on, on the shaly bank as the road approaches Villalago, a few very fresh *Loweia* var. *gordius* appeared, and had I had time, I could probably have found more, but it was necessary to pick up what I could in passing and to hurry on to the lower ground beyond Villalago, this being at an altitude, about 2,500ft., which I was not likely to have a second opportunity of examining in the Abruzzi. There is a steepish descent below the village, on the precipitous sides of which there is little to be seen and nothing to be caught, but on reaching nearly flat ground again I came upon the most abundant supply of butterflies that I had hitherto met with in the Apennines, both sitting on damp places in the road and flying over the grass and flowers at the side of it. Here I took the first *Cyaniris semiargus* I had ever seen in central Italy, and here the only *Loweia dorilis* I ever saw in the Abruzzi; there was nothing remarkable about the former, the latter, a ♂, was very large, with a border of orange spots nearly reaching the costa on both wings, and edging a series of black spots on the hindwing, very yellow (for a ♂) on the underside, and with the markings, both orange and black, clear and decided. *P. argus* (*aegeon*), *P. icarus*, *A. astrarche* and other common species were also abundant, and I also took a few black and white "skippers," one of which was certainly a small *Hesperia carthami*, and another, in the light of the last "Bulletin" of the Geneva Society, I can also pronounce to be *H. onopordi*, a species which I have also taken at Follatterre in the Rhone Valley and at Aix-en-Provence. I lingered round this spot too long and had hardly got a mile further, where *Satyrus alcyone* and one of the large Argynnidids (probably *A. aglaia*) were flying about the brambles, when I saw the diligence approaching behind me, giving me only time to net one not very fresh *S. alcyone*, before I had to clamber up to my place beside the driver, though longing for a much more exhaustive and lengthened search in this interesting and, I am sure, rich locality. Of the species not specially described above, the Pierids were all large, *P. napi* being so strongly marked on the upperside that I should have taken it to be *P. manni* var. *rossii*, had it



not been for the underside; *Klugia spini*, even when fresh, was remarkable for the dulness of the blue spot at the anal angle of the hind-wing; the ♂s of *Lowia* var. *gordius*, though well-spotted and not of a very deep copper colour, were strongly suffused with purple, the ♀s were rather pale in colour, and neither sex showed any inclination towards var. *intermedia*, as they generally do in the southern valleys of the Alps, both in Italy (Val Vedro) and Switzerland (Val Maggia). Scanno is certainly a place to be recommended to any entomologist visiting the Abruzzi, and every yard of the road from Anversa should be walked in both directions.

We returned to Sulmona only for the night, and the following day took our departure for Roccaraso, some 35 miles distant on the line towards Naples. Backwards and forwards and up and up, climbs the line till we reach Campo di Giove on "the roof of the world"—only 4,365ft. after all, but feeling at least 3,000ft. higher—after which we descend slightly, passing the stations of Palena and Rivisondoli-Pescocostanza, and finally arriving at Roccaraso, still more than 4,000ft. above the sea-level. Here there is an excellent mountain hotel, the Albergo Monte Maiella, consisting of three separate houses, each with its own cuisine and public rooms as well as bed-rooms, in the furthest of which we were ensconced. This is only open in the summer, but there is a hotel at each of the two villages Rivisondoli and Pescocostanza (famous for its lace-making) which are open in the winter too; for this valley, where the snow lies far into March, and the wolves come down and carry off the lambs, is the great Italian resort for "winter sports"; but for the entomologist Roccaraso is far more eligible, and has the further advantage of lying much nearer to its station; though much time is wasted, if one desires to make railway expeditions, in waiting for trains which are often an hour late, though one must not reckon on this as they are occasionally models of punctuality. The Monte Maiella is not one of the hotels of phenomenal cheapness, but in July, 8fr. a day will procure pension with a first floor room, the second floor rooms are (with an unusual appreciation of their superiority) rather more. Here we remained for ten days, which we would gladly have prolonged, but Subiaco was awaiting us, and we could not delay longer. Our first day was Sunday, and I was only too thankful to make it a day of rest, but towards evening we went out along a very rough hill-side path to the south of the village, where *P. aegon* was sleeping on the grass-stems, in such numbers as I have only seen equalled at the Ganter Bridge, below Bérisal. I had, however, no entomological equipment with me, and could only take one in a small box lent to me for the purpose. In this place the butterflies rested indiscriminately, head upwards or downwards, or horizontally along a leaf, but I do not think they were really settled for the night, as the slightest touch caused them to fly off, though, the sun being behind the hills, none had the upperside of the wings exposed. On the following day, Monday the 18th, I began collecting in earnest. My first expedition was up the mountain on which the hotel looks out, ascended by a rough path which begins at the side of the cemetery, where I took a few *Rumicia phlaeas*. On the hillside itself there were a few *Melanargia galatea*, and great numbers of *Plebeius aegon*, and on the nearly flat piece of what had once been cultivated ground, just at the top, were a few *Argynnis niobe* and one or

two *Hipparchia semele*; advancing to the left and still rising, I got into a strong wind, and to avoid it bore to the right and kept under the lee of the hill-top. This brought me shortly to the corner of a cornfield, which at its further corner joined a field of vetch, and it was on the rough ground at the edge of these, and especially the latter, that I took a number of species, viz., *Plebeius aegon*, *Polyommatus icarus*, *P. hylas*, *P. eros*, *P. meleager*, *Cyaniris semiargus*, *Agriades coridon*, *A. bellargus*, *Aricia astrarche*, *Pyrameis cardui*, *Argynnis aglaia*, *A. niobe*, *Issoria lathonia*, *Colias edusa*, *C. hyale*, *Aporia crataegi*, *Pieris rapae*, *P. ergane*, *Epinephele lycaon*, *Pararge megaera*, and a *Hesperia*, which exactly resembles Lacreuzé's illustration in the last Geneva *Bulletin* of *H. cirsii*, though it has far more white, especially on the lower wing, than any other specimen of *H. cirsii* that I have ever seen, and I took the species (which was by no means scarce here) to be *H. cynarae* when I captured it. On returning to the hotel, I saw *Eucanessa antiopa* and three or four specimens of an *Erebia*, which was shown by the capture of one of them, to be *E. stygne* in an advanced stage of dilapidation. By far the most noteworthy of these species (except *P. ergane*, which I had not recognised) was *P. eros*. This species is found everywhere round Roccaraso, from 4,000ft.; a much lower level than in the Alps, where I have never taken even a stray specimen below 5,000ft.; and rarely below 6,000ft.; it is of a far deeper and brighter blue than in the Alps, bearing much the same relation in colour to the Alpine specimens, that *polonius* does to *coridon*. *A. cordon* was also peculiar, being very light in colour, and corresponding accurately with Zeller's description of var. *apennina*, though not with his type specimens. It is certainly the palest form apart from the Spanish races that I have ever seen. There was a remarkable absence of the ♀s of almost all these species; *P. aegon* and *P. icarus* were the only Lycænids of which a ♀ was to be seen, nor was this sex represented in the Argynnids or the Coliads; *H. semele* on the other hand was wholly deficient in ♂s. On the following day I made my way direct to this same hill-top to the N. of the village, and took in addition to the species already named *Erynnis althaeae*, *Lycaena arion*, *Pieris napi*, *Aglais urticae* and *Melitaea parthenie*, the latter in some numbers. In the late afternoon we crossed the railway and went towards the woods to the east, but *Pararge maera* was the only species to be observed. On Wednesday we took this path again, and here, at more than 4000 feet above sea-level we came upon what was apparently a typical English oak-wood. It is true that the oaks were not of the same species as that which is common in England, but as the acorns were as yet quite inconspicuous, the difference in appearance was but slight; the undergrowth consisted of tramble, wild rose, hawthorn and black-thorn, and the flowers of red and white clover and of the common meadow sweet and forgot-me-not all added to the familiarity of the scene. The butterflies differed widely from those of the hillside and hill-top to the north. The two Coliads were again present as well as *P. aegon*, *C. semiargus*, *P. icarus*, *A. urticae*, *M. parthenie*, *P. megaera*, and *P. napi*, and it was curious to see *P. eros* flying about the borders of a nearly flat cornfield at the edge of the wood, but no other species was present which I had met with on the hill; there were, however, *Hesperia carthami*, very small, *Agriades sylvanus*, *Adopaea lineola*, *Aricia eumedon* *Polyommatus amandus* (I call it so, though if the genus is to be divided



up, I am inclined to place it with *semiargus* and *celastrina* in (*Cyaniris*), *Nordmannia ilicis* (worn), *Pieris brassicae*, *Leptosia sinapis*, *Limenitis camilla*, *Polygonia egea*, *Pararge maera*, *P. egeria*, *Coenonympha arcania*, *C. pamphilus* and *Epinephele jurtina*. On a second visit to this wood on the following day I saw fewer species, but took in addition, *Lycaena arion*, *Everes alcetas*, *Nordmannia acaciae*, *Argynnis aglaia* and *A. niobe*. *P. amandus* varied both in size and freshness, one specimen was almost as large as those from the Tyrol, but without the conspicuous broad black border displayed by the latter; *L. arion*, which was very worn, was rather small and dark, but not approaching the blackness of var. *obscura*; *C. arcania* is like the Assisi specimens, considerably smaller and with a narrower white band on the underside than the Swiss lowland and Jura form, but not approaching var. *darwiniana*; *P. egeria* was not markedly of the southern form, certainly not reaching beyond var. *intermedia*, nor was *E. jurtina* at all of the *hispulla* form; *A. eumedon* was very small and mostly a good deal the worse for wear; *A. niobe* in both places varied a good deal in size, and in the depth of colour on the underside, but in neither did it show any tendency towards var. *eris*; *A. aglaia* was generally rather small, and showed a tendency on the underside to the duller green of the mountain form; *L. camilla* was rather large, in striking contrast with the late specimens I had taken during a former visit at Assisi. Both on Friday and Saturday we went over by train to Palena station, not with any view of going to the town which is some seven miles away, and more than 1500 ft. lower down, but intending to hunt in the plain, a large, flat, slightly marshy expanse, which was evidently once the bed of a lake, but is now an immense hay-field. Not finding, however, any path leading into it (though there is one just beyond the station), and being much attracted by a steep little gorge, down which a small stream flows, close to the station, my whole time was devoted to this and to the woods on the hill above it on both occasions, and a rich locality it proved to be. The "skippers" included *Hesperia alveus*, *H. serratalae*, *Erynnis alceae*, *E. althaeae*, *Agriades sylvanus*, *Adopaea flava*, *A. lineola*, and *Nisoniades tages*; the "blues" *Everes alcetas*, *Celastrina argiolus*, *Plebeius aegon*, *Polyommatus icarus*, *P. eros*, *P. meleager*, *P. hylas*, *P. amandus*, *Cyaniris semiargus* (mostly worn), *Agriades coridon*, *A. thetis*, *Aricia astrarche*, very large and with small orange spots, *A. eumedon*, and *Lycaena arion*, there were also magnificent fresh specimens of *Heodes virgaureae*, ♂s only, and besides, *Papilio machaon*, the two usual Coliads, and the three common Pierids, a few *Melitaea phoebe*, small, rather dark and heavily marked—a remarkable contrast with the vivid and lightly marked specimens taken last year at Assisi—and looking very like *M. cinxia*, a few *M. parthenie*, which, like those of Roccaraso and of Assisi last year, are small and for the most part heavily marked, *Epinephele jurtina* and *Melanargia galatea* in abundance, and single specimens of *Dryas paphia*, *Satyrus cordula* and *Hipparchia semele*, all of which were evidently just beginning to emerge, and of *Erebia stygne*, which on the other hand was quite over. There are several other gulleys of the some kind which might prove equally prolific, but this one occupied all my time and energies. On the afternoon of the 24th I strolled up to the wood, but found nothing fresh except a few *Issoria lathonia* and a single ♂ *Loweia* var. *gordius* very fresh, much suffused with purple, and slightly tending towards the ab. *midas* on the

underside and towards the type *alciphron* on the upper. On the following day, my last at Roccaraso, I went in the morning to the wooded slopes below the village on the road towards Castel di Sangro. Here the most conspicuous species was *Nordmannia acaciae*, which was flitting about from flower to flower, close to the ground, and looking uncommonly like a skipper in its flight, but *Coenonympha arcania* was also abundant, and *Colias edusa*, *Argynnis aglaia*, and *Melitaea parthenie* occasionally appeared. *Melanargia galatea* was more frequent, and I took a single specimen of *Nordmannia ilicis*. On repairing to the same spot after luncheon I saw but few *N. acaciae*, but *A. aglaia* was more frequent, including ♀s for the first time, I also took two or three *N. ilicis*, and both *Pararge egeria* and *Limenitis camilla* put in an appearance. At 5.30 I determined to go once more to the edge of the cornfield over the brow of the hill, above the cemetery, where on several evenings I had seen many Lycænids at rest, on the chance of finding ♀s of some of the species, and was rewarded by taking five absolutely fresh ♀ *P. meleager*, as well as ♀ *P. eros*, *A. coridon*, and of course *P. icarus* and *P. aegon*, at rest, and a fine ♀ *A. niobe* on the wing. The Lycænids sat on the bents on the slope facing slightly east of north, below the cornfield, and also in far greater numbers on the cornstalks themselves. As long as the sun was out they invariably faced towards it, with outspread wings and head downwards, unless there was much wind, in which case not even the sun would induce more than about 20 to 25 per cent. to display the upper surface, but when the sun had once disappeared they sat indifferently on either side of the stem, sometimes two or three on the same stem, on different sides of it, with the wings closed over the back, and in some cases with the head upwards, though the proportion of these was not greater, I should think, than 15 per cent. The ♀ *P. eros* are very slightly tinted with blue, and are distinctly squarer than the ♂s, they have some orange on the upperside of both wings. The ♀ *A. coridon* are small and pale in colour and generally without a trace of blue, though I took one at Palena (unfortunately damaged) whose hindwings were blue to the border; the ♀ *P. meleager* are of brilliant, slightly violet-blue, with dark borders, but very little dark veining, a black discoidal spot, and often whitish lunules inside the border of the hindwing, or even a whitish wedge-shaped streak, towards the disc, such as one sometimes finds in the ♀ of *P. icarus*. It may be interesting to add that, at the same spot, and also at Palena, the form of *Callimorpha dominula*, in which orange is substituted for crimson on the hindwing was rather common, though not easy to take, as they generally flew among the corn; I obtained, however, one pair, the ♀ of which laid a batch of eggs, which I at once sent to England to Mr. Prideaux, who is rearing the resulting larvæ. With our departure from Roccaraso, on July 26th, my time in the Abruzzi properly speaking ended, but our next place of sojourn, Subiaco, is still in the Apennines, and proved to be a locality of great entomological interest, so that it would be foolish to allow the title of this paper to interfere with my giving a somewhat detailed description of the place and its entomological treasures, so far, that is, as my very short experience enabled me to explore them.

Anyone who may think of visiting Subiaco is hereby warned to approach it from Rome, or from some place in that neighbourhood,



such for example as Tivoli; otherwise he will find himself after a very tiring journey (with no possibility of obtaining food after Sulmona), stranded at the horrible little wayside station of Mandela, with two hours to wait, too late for hunting, though the neighbourhood looks hopeful, and with figs, raw sausage, and a deadly kind of wine, as the only available nutriment. *Esaperto crede!* Never shall I forget our arrival at Subiaco in the dark, tired out, hungry, and with bad headaches dealt out indiscriminately all round. We had sent on our heavy luggage direct to Rome, and had not very much more than we could conveniently carry, but no hotel dreams of sending to meet the trains, and one chartered a boy to carry what one cannot well manage oneself, and indeed it would be absolutely necessary to do so even if one could carry it all; for no sooner did we get off the platform than we were assailed, nay mobbed, by a crowd of young urchins, pushing, howling, seizing at such articles as we were carrying ourselves, and absolutely refusing to take "no" for an answer when we had been tormented into making a reply of some kind. There was but one sentiment in one's mind, a deep unspeakable loathing of everything in the shape of a boy that did or would or might exist. Even when we did arrive at the Albergo dell Aniene, to which we had written for rooms, there was a "festa" going on in the house, and the noise was almost as bad as what we had endured outside. The foremost, noisiest, and most persistent of our persecutors was a sturdy young ruffian named Pietro Pillicio. Nobody, I imagine, would call Pietro attractive in appearance, he is blatant and pushing, he smokes a remarkable German pipe with a lid, and yet I have mentioned his name, not, as may be supposed, to warn people off, but to induce anyone who may go there to secure his services, for the sake of their own comfort and convenience. He insisted on coming out with us the next day, to our undisguised annoyance, yet the moment you have given in to his persistence all is changed. Not another boy is allowed to come near you or to worry you in any way, every beggar is sent off with an audacious "non capiscono," accompanied with a grin and a wink on your side of his face (as if anybody *could* mistake what an Italian beggar said, even if the language were wholly unknown to him), and beyond all he is a perfect mine of information, and stranger still of correct information, about everything in Subiaco and for ten miles round. He has even acted as guide to an "Inglese" (how I wonder who it was!) who came to collect butterflies in the mountains. Strangest of all, when we had spent some three or four hours in his company, every one of us was genuinely sorry to part with him, and had we been staying longer I have no doubt he would have become our daily companion. The hotel improved on acquaintance as greatly as Pietro, and even one's judgment of the Subiaco boys gave way before our little waiter, Ernesto Piacentini, who cannot have been 16, but who managed the whole work of the place, the gentlest, best-mannered and most efficient lad I have met with in all Italy. And how wonderfully cheap the hotel is, and how picturesque (though dirty) the town itself, how intensely interesting its two famous monasteries, how marvellously beautiful its surroundings, and what a gold-mine for the entomologist who has time enough for exploration at his disposal! Our first morning was entirely taken up by visits to the monasteries of S. Scholastica and S. Benedetto, and my hunting was confined to the walk between the two. The principal species in

evidence were *Papilio machaon*, *Iphiclides podalirius*, *Pararge megaera*, *Epinephela ida*, and *Melanargia galatea*, I also saw *Pyrameis atalanta*, *Euranessa antiopa*, *Polygonia egea*, *Polyommatus meleager*, and others. It was only on the following day that I had a good genuine butterfly-hunt. I started in the direction of the monasteries, but loitered long on the site and in the immediate neighbourhood of Nero's villa. Here I took, or in a few cases saw beyond possibility of mistake, all the species mentioned for the previous day except *P. atalanta*, and in addition *Erynnis alceae*, *Hesperia cirsii*, *H. serratulae*, *Augiades sylvanus*, *Adopaea flava*, *Thymelicus acteon*, *Polyommatus icarus*, *Aricia astrarche*, *Celastrina argiolus*, *Rumicia phlaeas*, *Pieris brassicae*, *P. rapae*, *P. napi*, *Pontia daplidice*, *Colias edusa*, *C. hyale*, *Pyrameis cardui*, *Argynnis adippe* var. *cleodoxa*, *Melitaea parthenie*, *M. didyma*, *Satyrus alcyone*, *Hipparchia semele*, and *Coenonympha pamphilus*. The one specimen of *H. cirsii* that I took, was much smaller than those of Roccaraso (if I have named the latter correctly), somewhat smaller also than my series from Éclépens, but quite unmistakable. There was also only one specimen of *A.* var. *cleodoxa*, the underside hindwing being washed with a much richer yellow than is usual further north, e.g., in the Val Maggia, where this variety is abundant. *P. machaon* appeared on the wing to be of bright colouring and in good condition, but when taken was not remarkable either in the one point or the other; it was of average size, whilst *I. podalirius* was rather small, and turned out to be in somewhat better condition than it looked when flying. *P. icarus* was magnificent both in colour and size, it was of the "royal" blue I described last year in the Assisi late-brood specimens, some only of the specimens having black marginal spots on the upperside hindwing. After lingering too long in this prolific spot, I mounted up past S. Scholastica, but instead of turning sharply to the right, over the little bridge beyond the monastery which leads to S. Benedetto, I continued direct up a wild-looking gorge which seemed to give promise of a successful chase. Here at the outset I encountered *G. cleopatra*, of a somewhat larger size than the Sulmona specimen, but still considerably smaller than those from the Riviera, and almost immediately afterwards took my first *Pieris ergane* in this locality, and at last suddenly realised what I had got and immediately set to work to look out for more. I took 8 in all, 6 ♂s and 2 ♀s, in addition to the 3 ♀s previously taken unrecognized at Sulmona and Roccaraso. They are much smaller than average *P. rapae* (and at Subiaco the latter species is especially large, I took a pair on the same ground for comparison), and the characteristic underside, entirely without markings, ought to have opened my eyes at once; the ♀s are all, with one exception, of a pale canary colour on the upperside, the one exception is the largest specimen I took and inclines rather to straw-colour, perhaps in consequence of having lost its first freshness, but the underside stamps it at once. All the other specimens taken were very fresh. This species and *P. rapae* when flying on the same ground take no notice whatever of each other, and it would be impossible to mistake them for one another on the wing so different is their flight, but it is easy to mistake *Leptosia sinapis*, which is common in this gorge, for *P. ergane*, and indeed I took at least half-a-dozen specimens of the former under the impression that they were the species I was looking for. Here also I found a couple of *Limenitis*



*camilla*; *Klugia spini* was also common, and I saw several *Dryas paphia*, but *P. ergane* occupied my attention, and my time was sadly limited, for we were leaving Subiaco that afternoon, and I ought to have been starting back by the time I arrived in the gorge, otherwise I should have made a point of netting more specimens of *P. ergane*, which was far from scarce, though the ground made pursuit impossible, and should then have penetrated to the top of the gorge and up the mountain side, in spite of the fact that the place looked made for wolves, which I afterwards heard are numerous thereabouts, though I think the danger from them *in summer* is greatly exaggerated, as I cannot hear of any cases of actual attacks made by them on passers by; still, it is right to add that the natives never penetrate into the wooded mountains here alone without a gun. It will be seen that I only hunted Subiaco in one direction, but the whole neighbourhood looks as if it were well worth a thorough exploration. I must hope to renew acquaintance with it at some future time.

My last hunt really hardly comes within the province of this paper, for it was not only outside the Abruzzi, as is Subiaco, but quite away from the Apennines, for it was in Rome, on the Palatine, in the rough wild garden surrounding the ruins of the Palace of the Cæsars. I do not know whether I was the first who dared to take a net into these precincts, but I should think probably not, as the gardeners did not seem in the least surprised at my proceedings, and except for them I had the whole place to myself from 3 p.m. when it is opened till 4.30 when I left—somewhat tired, for I was far from well and the thermometer that day stood at about 102° in the shade. There was however no scarcity of butterflies—*Raycardia telicanus* was common, the smallest form of it I have ever met with; *Polygonia egea* was also abundant and looking, in its provoking way, gloriously fresh, but being far from it on close inspection. I can't think when it really *is* fresh, for I have been in its haunts from mid-June till early November, and the only really fresh specimen I have ever taken was at Perugia towards the end of September, and this certainly not of the same brood which is fairly common in the summer, which equally certainly does not consist of hybernated individuals. I took one specimen of *Erynnis alceae*, small, and so light in shade, and with so much yellow in the composition of its ground colour, that on the wing I took it for *E. lavaterae*, and when first caught for *E. althaeae* var. *boetica*, but the underside, and more particularly the size and shape of the transparent spots, leave no doubt as to the species. *Polyommatus icarus* was very fine, as also was *Coenonympha pamphilus*; *Papilio machaon* on the other hand was very small and rather dull in colour, especially the red spot. *Gonepteryx cleopatra* was occasionally to be seen, but kept well out of range; *Colias edusa*, *Pieris brassicae*, *P. rapae* and *Pontia daplidice* were all common, and I took a ♂ specimen of the latter with distinct traces of a black spot near the inner margin of each forewing. *Pararge megaera* was as abundant here as everywhere else, and *Rumiccia phlaeas* of pronounced *eleus* form brings the list to a close, though it would probably have been increased, at any rate by some other Vanessids, if I had remained longer.

The following list comprises, to the best of my belief, all the species which I met with during my expedition, together with the localities in which they were found:—

*Erynnis lavaterae*, Sulmona; *E. althaeae*, Aquila, Roccaraso, Palena; *E. alceae*, Aquila, Sulmona, Palena, (Terni, Subiaco), [Rome]; *Hesperia alveus*, Palena; *H. cirsii*, Roccaraso, (Subiaco); *H. onopordi*, Villalago; *H. serratulae*, Palena, (Subiaco); *H. carthami*, Villalago, Roccaraso; *Nisoniades tages*, Assergi, Palena; *Augiades sylvanus*, Roccaraso, Palena, (Subiaco); *Thymelicus acteon*, Sulmona, Roccaraso, (Assisi, Subiaco); *Adopoea flava*, Roccaraso, (Subiaco); *A. lineola*, Sulmona, Roccaraso, Palena, (Fiesole, Assisi); *Heodes virgaureae*, Palena; *Loweia alciphron* var. *gordius*, Villalago, Roccaraso; *L. dorilis*, Villalago; *Rumiccia phlaeas*, Aquila, Sulmona, (Subiaco), [Rome]; *Lycaena arion*, Roccaraso, Palena; *Scolitantides baton*, Aquila, Sulmona, (Assisi); *Aricia eumedon*, Roccaraso, Palena; *A. astrarche*, Sulmona, Roccaraso, Palena, (Subiaco); *Polyommatus icarus*, everywhere; *P. eros*, Roccaraso, Palena; *P. escheri*, Assergi, (Fiesole); *P. hylas*, Assergi, Roccaraso, Palena, Scanno; *P. melaeager*, Roccaraso, Palena, (Subiaco); *P. amandus*, Roccaraso, Palena; *Agriades coridon*, Scanno, Roccaraso, Palena; *A. thetis*, Assergi, Scanno, Palena, (Assisi); *Cyaniris semitargus*, Villalago, Roccaraso, Palena; *Plebeius argus* (*aegon*), Scanno, Villalago, Roccaraso, Palena; *P. argyrognomon* (*argus*), Scanno; *Everes alcetas*, Sulmona, Roccaraso, Palena, (Terni); *Cupido minimus*, Assergi; (*C. ostris* (*sebrus*), Assisi); *Celastrina argiolus*, Scanno, Villalago, Roccaraso, Palena, (Subiaco); [*Raywardia telicanus*, Rome]; *Chattendenia w-album*, Aquila; *Klugia spini*, Assergi, Sulmona, Scanno, Villalago, (Subiaco); *Nordmannia acaciae*, Villalago, Roccaraso; *N. ilicis*, Roccaraso; *Iphiclides podalirius*, Sulmona, (Subiaco); *Papilio machaon*, Sulmona, Palena, (Subiaco), [Rome]; *Aporia crataegi*, Scanno, Roccaraso; *Pieris brassicae*, Sulmona, Roccaraso, Palena, (Fiesole, Subiaco), [Rome]; *P. rapae*, everywhere; *P. ergane*, Sulmona, Roccaraso, (Subiaco); *P. napi*, Assergi, Scanno, Roccaraso, Palena, (Subiaco); *Pontia daplidice*, Aquila, (Subiaco), [Rome]; *Leptosia sinapis*, Aquila, Sulmona, Roccaraso, (Subiaco); *Colias edusa*, everywhere; *C. hyale*, Sulmona, Roccaraso, Palena, (Subiaco); *Gonepteryx cleopatra*, Sulmona, (Subiaco), [Rome]; *Dryas paphia*, Palena, (Subiaco); *Argynnis aglaia*, Roccaraso, Palena; (*A. adippe* var. *cleodoxa*, Subiaco); *A. niobe*, Roccaraso, Palena; *Issoria lathonia*, Aquila, Roccaraso; *Brenthis daphne*, Scanno; *Melitaea phoebe*, Palena; *M. didyma*, Sulmona, (Subiaco); *M. parthenie*, Roccaraso, Palena, (Subiaco); *Pyrameis cardui*, Aquila, Roccaraso, (Subiaco); *P. atalanta*, Sulmona, Villalago, (Subiaco); *Euvanessa antiopa*, Sulmona, Villalago, Roccaraso, (Subiaco); *Aglais urticae*, Villalago, Roccaraso; *Polygonia egea*, Aquila, Roccaraso, (Assisi, Subiaco), [Rome]; *P. c-album*, Roccaraso; *Limenitis camilla*, Roccaraso, (Subiaco); *Pararge maera*, Villalago, Roccaraso; *P. megera*, everywhere; *P. egeria*, Roccaraso, (Terni); *Satyrus alcyon*, below Villalago, (Subiaco); *S. cordula*, Palena; *Hipparchia semele*, Roccaraso, Palena, (Assisi, Subiaco); *Epinephele jurtina*, Aquila, Roccaraso, Palena, (Fiesole, Assisi, Subiaco); *E. lycaon*, Scanno, Villalago, Roccaraso; *E. ida*, Sulmona, (Subiaco); *Coenonympha arcania*, Villalago, Roccaraso; *C. pamphilus*, everywhere; *Erebia stygne*, Roccaraso, Palena; *Melanargia galatea*, everywhere.



# The Orchid Thrips: *Anaphothrips orchidaceus*, Bagnall.

By RICHARD S. BAGNALL, F.L.S., F.E.S.

Until recently I was under the impression that this pretty little species confined its attentions solely to the leaves of orchids. When an infested orchid is in flower, however, *A. orchidaceus* and its larvæ forsake the leaf for the flower, and may be found sheltered in numbers under the corolla, and, feeding upon the tissues of the petals, it soon renders a flower unsightly and unmarketable. Owing to its seclusive habits, ordinary fumigation, etc., is of little use in dealing with the orchid thrips, in fact the only way, I think, is to institute periodical searches and clean the plants by picking up the insect and its larvæ with a camels' hair brush, and killing them by immersion in alcohol or other destructive agent, a laborious method it is true, but apparently the only safe method.

The Rev. James Waterston has recently sent me several tubes of *A. orchidaceus* from the Royal Botanic Gardens, Edinburgh, found chiefly on *Masdevallia coccinea*. There are one or two specimens in Mr. Waterston's parcel from *Cypripedium actæus* and of the larvæ from *Oncidium* and *Hypolepis*. Last year I found the form on *Cypripedium* at Copenhagen, on *Lycastes skinneri*, *Cypripedium* spp. at Gothenburg, and on *Cymbidium* and *Epidendron* at Christiania, and have had it sent me from Holland by the Director of the Leyden Museum.

FOODPLANTS.—*Cattleya* spp., *Cymbidium* spp., *Cypripedium* spp., *Epidendron* spp., *Hypolepis* spp., *Lycastes skinneri*, *Masdevallia coccinea*, *Odontoglossum* spp., *Oncidium* spp., and *Zygopetalum* spp.

DISTRIBUTION.—England (Kew Gardens, London; Wylain, Alnwick, and Newcastle, Northumberland); Scotland (Glasgow and Edinburgh); Ireland (Dublin); Belgium (Brussels); Norway (Christiania); Sweden (Gothenburg); Denmark (Copenhagen); and Holland (Leyden).

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## "Lampides" galba, Led., A Plea for accuracy.

By P. P. GRAVES.

While studying some of the Palearctic Plebeids in the British Museum collection, in July 1910, I came across several butterflies from Ismailieh, which had been doubtfully identified with *L. galba*, by H. J. Elwes. These insects were, in my opinion, simply small specimens of the Egyptian summer race of *Zizera lysimon*, Hb. I then repaired to the first picture-book on which I could lay my hands, to wit Dr. A. Seitz's work on the Palearctic Macrolepidoptera. Here I found a figure of *galba*, which bore a great resemblance to the above mentioned specimens and a very brief description of the insect, in which it was stated that *galba* was not easily distinguishable from *lysimon*, that it occurred in Syria, and that it had been taken at Ismailieh.

Now, leaving aside for the moment the question what the insect figured by Seitz and doubtfully identified with *galba* by Elwes really is, I should like to call the attention of lepidopterists who are interested in the Palearctic butterflies to the original description of *galba*, published by Julius Lederer in 1855 ("Beitrag zur Schmetterlings-Fauna von Cypern Beirut und einem Theile Klein-asiens." Aus den Schriften des zoologisch-botanischen Vereins in Wien, 1855) with

which neither Seitz's plate nor the actual specimens in the British Museum coll. correspond at all.

On page 14 of the brochure bearing the above title (page 190 of the Proceedings of the above mentioned Society) I find the following description of *galba*, which is here included in the Fabrician genus *Lycaena*.

"*Galba*, Kollar in litt., plate 2, figure 4, male. Above scarcely distinguishable from *lysimon*. The male has the same colour and the same broad black margin, but the hindwings have in cell 2 a blackish marginal spot, separated from the margin by a light-coloured line. The female is of an uniform brown above, the black spot in cell 2 is more marked and bordered with bluish (bläulich umzogen), the remaining cells show traces of marginal spots, notably towards the anal angle, and the light marginal line is a little more sharply defined. The underside is light brownish-grey as in *lysimon* or *trochilus*, only a little darker in the female than in the male. The markings are here nearer to *trochilus*. On the forewing they are identical with those of that species, only the centres of the spots (Die Kerne der Flecken) are not so black, but of a dull-brown, and not so clearly marked. The hindwings resemble *trochilus* but lack the orange-yellow marginal band. The shape and position of the dull brown eye-spots are the same as in *trochilus*; in cell 7 are two black spots surrounded by light rings (hell umzogene Flecke) and below the inner one of these and near the base of the wing, another, all in the same position as in *trochilus*. The fourth spot below the last, which is present in *trochilus*, is absent in *galba*. The spot on the anal margin itself, which is sharply marked in *trochilus*, is here indistinctly present (nur matt vorhanden) and of the marginal spots only the large ones in cell 2 are deep black and powdered with metallic scales (mit Erzschuppen belegt), while the remainder are small and dull brown. I obtained only 8 specimens, which were taken in company with *lysimon* in clover-fields. Herr Kotschy found this species in Senaar."

Zach, who collected the insects mentioned in the brochure published by the Wiener zoologisch-botanischer Verein took *lysimon* in clover-fields near Beirut in July, which gives us the date of *galba*'s appearance.

In my humble opinion, which I only venture to put forward on the ground that I have had considerable acquaintance with *Zizera lysimon*, having taken it very frequently in Egypt, where it is widespread, and also in Syria (Damascus 2,800ft., 2nd-6th September, 1910) the insects figured by Seitz, doubtfully identified with *galba* in the British Museum collection are *lysimon*, smaller, slenderer and more heavily spotted on the underside than my few spring specimens of that species, and than most of the specimens from other localities (Teneriffe, Algeria, etc.), in the British Museum coll. I explain the difference thus:—*lysimon* in Egypt is to be found in clover fields, generally in good condition from the beginning of March till early in November. The cold nights and damper air of the frequently irrigated fields in late November and the next three months are unfavourable to the rapid development of the larva, which, I am assured by Mr. Willcocks, of the Khedivial Agricultural Society, feeds on cultivated clovers. The specimens that first emerge in early March are larger and more heavily built than those that occur in the hotter months, when there is a rapid succession of broods if not continuous-broodedness. It is just possible that the difference in the climatic condition accounts for the tendency to the obsolescence of the underside spotting in my early spring specimens. It appears to me to be highly probable that the larger size of these specimens and of those from Algeria and the Canaries, as compared with those taken later in the year in Egypt and Syria by the writer, is due to the fact that the winter-feeding larva has a more abundant and more succulent, because better watered, pabulum.



My smallest specimens come from desert ravines near Helwân and from dry sandhills near Abukir on the Egyptian coast. Tutt has recorded the fact that species of *Plebeiids* which are single-brooded in some localities and double- or triple-brooded in others are often larger in the former (cf. *P. icarus*, Brit. Butts., iv., p. 128). This he ascribes to the longer feeding-period in the former case. *Pari passu* this should apply in the case of *lysimon* during seasons when the larva feeds up more slowly. However, this is only a theory on my part which I do not wish to press, especially if examination of the genitalia suggests that the Egyptian summer *lysimon*, the British Museum *galba*, and Seitz's *galba*, are really distinct from the true *lysimon*, Hb. But whatever they are, they cannot be identified with Lederer's or Kollar's *galba*. The above description rules that out. Moore in his *Rhopalocera Indica*, gives *galba* as a synonym for *lysimon*, perhaps rightly if we are to follow Elwes and Seitz, but certainly wrongly if we are to go by Lederer's original description.

The conclusion, therefore, is that whatever the insects in the British Museum Coll. are, they are not the *galba* of Lederer, whose description and figure of the butterfly (Plate 2, sec. Led. Plate 1, in my copy of the *Beitrag*), show an insect that bears a much greater resemblance in certain important particulars to *Chilades trochilus* than to *Zizera lysimon*. Miss Fountaine (*Entomologist*, xxxv., 467, p. 98), says that she took *galba* at the same time and in the same localities as *Castalius jesus* (*gamra*), i.e., above the Sea of Galilee during the last days of June, and on the plain of Jenin on July 3rd. It would be most interesting to know whether her *galba* correspond with Lederer's description.

### Early Summer amongst the Butterflies of the Rhone Valley.

By JOHN ALDERSON.

(Concluded from p. 261.)

There was a distinct improvement in the weather the following day, June 17th, for the sun shone brightly from a sky which remained of a clear summer blue from morning till night. Taking the train to Susten I walked through the meadows fringing the Pfynwald up to the entrance of Illgraben. In the meadows I found butterflies on the wing in good number and variety. In point of numbers the fritillaries took the first place, and the larger *Argynnids* dashing wildly everywhere, imparted no small amount of animation to the scene. Of these, *Argynnis aglaia* was the most common, with *A. adippe* and *A. niobe* and var. *eris* in fewer numbers. *Melitaea didyma* was very common, the majority of the specimens showing signs of wear. Towards Illgraben *M. aurinia* became equally common, but its condition was quite hopeless. Amongst the other fritillaries were *Melitaea phoebe*, *M. athalia*, *Brenthis dia*, and *B. euphrosyne*, the last being very ragged. *M. aurelia* also occurred here, but not in any numbers. The "blues" were in abundance, the greater number being *Agriades thetis*, which was getting worn but flying everywhere and sipping at the blossoms of red clover. *Plebeius argus* (*aegon*) was also plentiful and in good condition, the form being the usual one met with throughout the lower parts of the Rhone Valley. *Polyommatus icarus* was equally as common, as was also *Cyaniris semiargus*, which was in

fairly fresh condition. A single worn *Polyommatus amandus* was noted, whilst *Lycaena arion* was not uncommon. Here I took my first, and, incidentally, my only specimen of *Lycaena alcon*, a ♂ in perfectly fresh condition. A Lithosiid moth rising up occasionally from the herbage proved, on netting, to be *Lithosia striata*. Other species noted were *Powellia sao*, *Nordmannia ilicis*, *Aporia crataegi*, *Euchloe cardamines*, *Melanargia galathea*, and hibernated specimens of *Gonepteryx rhamni* and *Polygonia c-album*. The return journey was made by the road which traverses the fringe of the woods, and here *Melitaea phoebe* of a fine size was flitting to and fro along the roadway, a habit which was followed also by *Hesperia carthami* and *Erynnis lara-terae*, which were not uncommon. An open glade in the woods was flooded with bright sunlight, and here several *Papilio machaon* and *Iphiclides podalirius* were flying to and fro, or playfully sporting one with another, and exhibiting to perfection their graceful motions and admirable powers of flight. At times they would daintily alight on the tip of a pine branch, and anon would select a tall thistle for the resting-place, or come sailing down the sunlit glade on outstretched wings with the very poetry of motion. My acquaintance with their charming powers of flight had all the delight of novelty, and I must confess to a feeling of intense pleasure in watching their graceful evolutions as they sported gaily in the bright sunshine.

Taking an early train to Brigue the following morning, I walked from there up the Simplon Pass to Bérisal. In ascending the pass I followed the short cuts, and avoided the winding road as much as possible. The day was bright and sunny, and was in every way favourable to collecting. On the first short cut, which zigzags up the steep hill overlooking Brigue, a single *Polyommatus escheri* was picked up, and *Melitaea aurinia* was noted commonly enough, but in very worn condition. Further on, where the path clings to the side of the high precipitous slopes, *Papilio machaon* and *Iphiclides podalirius* were met with occasionally, whilst *Pararge maera* and *Parnassius apollo* were becoming more common. A glorious prospect was now gradually unfolding to the view, and I must admit that the magnificent scenery of the Simplon Pass fully realised my expectations. The combination of towering, snow-clad peaks, and deep rugged valleys, formed a splendid picture, the composition of which was continually changing and gaining in grandeur as one won fresh points of vantage.

Near the second Refuge the rocky mountain path joins the main road. On the roadway freshly-emerged *Aglais urticae*, of a good size, were not uncommon, with a single ragged *Polygonia c-album*. In that particular corner, which is the favourite haunt of *Plebeius zephyrus* var. *lycidas*, quite a number of species were on the wing. *P. zephyrus* var. *lycidas*, though not uncommon, was not in any great numbers, and not a few of the ♂s showed signs of wear. One ♂ of a large size, and in perfect condition, was further distinguished by slight additional spotting on the underside. The form of *Melitaea parthenie* met with here was much different from that of the lowlands, and tended more towards the facies of *M. athalia*. *M. cinxia*, in fairly good condition, was on the wing, and *M. aurelia* again turned up. Here *Plebeius argus* (*aegon*) was fairly common, and at the time of capture I was much struck by the prevailing form, which has the black margins to the wings so greatly increased in width. Of course,



I subsequently found that this form is characteristic of high elevations, and is not at all peculiar to the Simplon. On the same ground *Plebeius argyrognomon* was also taken, and the Simplon form of this species also differed from that of the Rhone banks. Although easily separable from *Plebeius argus*, the Simplon specimens of *P. argyrognomon* show some tendency to the former species in size, intensity of blue, depth of margins and more pronounced appearance of nervures. Other species met with in the neighbourhood of the second Refuge were *Hesperia carthami*, *H. alveus*, *H. malvae*, *Nisoniades tages*, *Polyommatus icarus*, *Agriades thetis*, *Lycaena arion* and *Aricia astrarche*. Soon after mid-day the sky clouded over, and in the absence of sunshine few insects were seen during the remainder of the journey. Immediately after passing the Ganter Bridge *Pieris napi* var. *bryoniae* was met with, but nearly all the specimens were more or less worn.

The following day, June 19th, was bright and sunny throughout, and I worked the ground in the vicinity of Bérisal, but notwithstanding the favourable conditions, the results were not very encouraging. With the exception of *Parnassius mnemosyne*, which was swarming in the fields surrounding the hotel, at no time, and in no particular place, did I find butterflies at all numerous. At this elevation, and in so well-known a locality, I expected to make the acquaintance of many new species, and was looking forward with much interest to collecting of a character that would be very different from that of the lowlands. These expectations were not fully realised, for I met with few new species, and the unseasonable weather recently prevailing was no doubt accountable for the general scarcity in the butterfly fauna, and the retarded appearance of many species. *Parnassius mnemosyne*, as noted above, was in the utmost abundance near Bérisal. Its condition was generally good, and its flight, low and somewhat lumbering, made its capture an easy matter. In the Ganterthal, and in the valley leading towards the Bortel Alp, insects were scarce. A new species was taken here in *Pararge hiera*, one or two somewhat worn specimens being captured. Other specimens taken or noted were *Erynnis lavaterae*, *Plebeius argyrognomon*, *Brenthis euphrosyne*, *Leptosia sinapis*, and *Melitaea parthenie*. Occasionally *Anthocharis simplonia* dashed past at a speed so rapid as to compel admiration—providing one's series was complete. A single specimen of what I took to be *Coenonympha satyrium* was noted. On the grassy slopes below the roadway, occasional *Aricia eumedon* were flying with *Polyommatus icarus* and *Cyaniris semiargus*. *Pieris napi* var. *bryoniae* was not at all uncommon, but there were few specimens that did not show signs of wear. On the other hand, *Euchloë cardamines* was surprisingly fresh. In the afternoon a walk up the Pass in the direction of the Hospice did not produce much of further interest. Amongst a few *Pararge hiera* taken was a dingy ♂, showing scarcely any trace of fulvous coloration on the upper surface, and bearing only one spot on each forewing and three on each hindwing. One or two *Erebia erias* were flying about the road, and at damp places by the roadside *Hesperia malvae* was congregating, though not in great numbers, with occasional *Nisoniades tages*. *Pieris* var. *bryoniae* became more common, and *Parnassius mnemosyne* less common, as one ascended the Pass.

I left Bérisal the next day, walking down from there to Brigue, and collecting by the way. The conditions were all one could desire,

the sun blazing fiercely from a cloudless sky. Butterflies were in much greater numbers, both in regard to individuals and species, and consequently the walk down the Pass proved most interesting and enjoyable. No *Pararge hiera*, *Pieris* var. *bryoniae*, or *Parnassius mnemosyne* were seen after leaving the Ganter Bridge; but the road from here to the second Refuge was swarming with insects. One or two *Melitaea parthenie*, with a strong tendency towards the *athalia* form, were taken close to the Ganter Bridge. Damp places alongside the road were numerous, and were the resort of many species of "blues" and "skippers," among which were *Hesperia carthami*, *H. malvae*, *Porcellia sao*, *Nisoniades tages*, *Agriades sylvanus*, *Agriades thetis*, *Polyommatus icarus*, *Cupido minimus*, *Cyaniris semiargus*, *Plebeius argus* (*aegon*) and *P. argyrognomon*. Out of the motley gathering I picked a very fine specimen of the var. *obscura* form of *Lycaena arion*, and also two ♂s, in good condition, of *Plebeius zephyrus* var. *lycidas*: one of these was taken quite close to the Ganter Bridge, and the other nearer the second Refuge. Another species was added to the list in the capture of three freshly-emerged *Erebia ceto*. Richly coloured *Aglais urticae* were flying about the roadway, where *Melitaea phoebe*, in fine condition, was equally common, flitting backwards and forwards, or looking very conspicuous as it sat with outstretched wings—a brilliant patch of colour in the dusty roadway. At frequent intervals *Parnassius apollo* floated lazily down from the steep slopes, and occasionally, with impetuous flight, *Colias hyale* dashed past. At the second Refuge insects were in abundance. *Papilio machaon*, with its bold, untiring flight, was dashing up and down the steep hillsides. Brilliant *Melitaea didyma* were flaunting their scarlet apparel about the flower-strewn slopes, stopping frequently to sip the nectar of the flowers, and showing no preference for any particular blossom. Here *Melitaea cinxia* was still in good condition, and *M. athalia*, *M. aurelia* and *M. aurinia* were also noted. A nice series of *Plebeius* var. *lycidas* of both sexes was taken, though the species was not in any great numbers. Among the *Agriades thetis* taken here was a good and large sized specimen of the ab. *puncta* form. *Colias phicomone* was added to the list, an exceptionally brightly coloured ♂ being captured on the slopes. *Plebeius argus* (*aegon*), *P. argyrognomon* and *Hesperia carthami*, were all flying in numbers. After leaving the second Refuge very little of further interest was noted. *Pararge maera* became common again, though no specimens had been observed at any place above the second Refuge. *Polyommatus escheri* was taken on the hillside overlooking Brigue.

June 21st, a bright, sunny day, found me again at Salquenen, with the hope of being able to work the little valley where rain had prematurely stopped my collecting on the 16th. A few *Pontia daplidice*, in excellent condition, were taken in and about the vineyards; and a new species, a ♂ *Satyrus cordula*, led me a pretty dance through the vineyards before I was able to turn it into the net. Passing through the fields, a single early ♂ *Hirsutina damon* was netted, making a further addition to the list. On reaching the little valley, I found plenty of insects on the wing, though the species were much the same as those noted on my previous visit, with the addition of *Colias edusa*, *Melitaea athalia*, and *Hipparchia semele*, all of which occurred sparingly. The large Argynnis were dashing wildly to and fro, and showed a strong partiality for the blossoms of scabious; at this flower I also



noted a hibernated ♀ *Gonepteryx rhamni*. On the upper vineyard paths I found several *Issoria lathonia*, in prime condition, and picked up three specimens of *Melitaea deione* var. *berisalenensis*, and another individual of this species was netted as it sipped at the blossoms of a high privet bush.

The following day I left Sierre by an early train for Aigle. The morning was gloriously fine, and I resolved to break the journey at Vernayaz, and spend a few hours under the cliffs there. The glorious promise of the morning was not realised, for long before midday the sun became hidden by clouds, and afterwards it beamed forth only at intervals. Some of these sunny intervals, though, were of sufficiently long duration to afford a good insight into the entomological wealth of the locality, and in consequence the day was very far from being uninteresting. The privet bushes were laden with blossom, and as soon as the sun burst forth insects were attracted to the bushes in swarms. The commonest visitors were *Brenthis daphne*, and *Loxia* var. *gordius*, the former being in excellent condition, as were also the ♀'s of *gordius*. Amongst the other species attracted to privet were *Heodes virgaureae*, *Nordmannia ilicis*, *Melitaea dictynna*, *Aporia crataegi*, *Iphiclide podalirius*, *Enodia hyperanthus*, *Epinephle ianira*, *Callimorpha dominula* and several species of *Anthrocerids*. Amongst the ♀ *gordius* at privet I was delighted to net a particularly fine example of *ab. midas*. The brambles were also in full bloom, and attracted many insects, including a freshly-emerged *Dryas paphia*; this species formed an addition to the list, which was still further increased by the capture of a perfectly fresh *Limenitis camilla*, flitting about the pathway. Only the ♂'s of *Heodes virgaureae* were out, and several perfect specimens were taken as they sat sunning themselves on the blossoms of flowers. *Hipparchia alcyone* was not uncommon, flitting about the pathway. Other species seen or captured included *Erynnis lavaterae*, *Adopaea lineola*, *A. flava*, *Augiades sylvanus*, *Lycaena arion*, *Cyaniris semiargus*, *Polyommatus amanda*, *Melitaea athalia*, *M. phoebe*, *Argynnis adippe*, *Leptosia sinapis*, *Euchloë cardamines*, *Gonepteryx rhamni*, *Parnassius apollo*, *Polygonia c-album*, *Pararge maera*, *Coenonympha iphis* and *Erebia stygne*. Swarms of *Vanessa io* larvæ were to be seen wherever the wild hop was trailing over the undergrowth, and a batch of young larvæ which I brought back with me fed up well on nettle, and produced a nice lot of good-sized imagines.

The following day, June 23rd, I spent working the St. Triphon marshes and Charpigny. In the marshes, *Pararge athena*, a species new to me, was very common, flying lazily about the willow hedges. The specimens proved to be all ♂'s, and were in the finest condition. *Brenthis ino* was flying in small numbers over the marshes, but unfortunately it was very worn. The latter remark applies also to *Polyommatus amanda* and *Coenonympha iphis*, which were both fairly common. A worn specimen of *Erynnis alceae* was picked up in the marshes, and other species more or less common here were *Adopaea lineola*, *Polyommatus hylas*, and *Melitaea dictynna*. On leaving the marshes, I made my way up the slopes of Charpigny, with the particular purpose of working *Melitaea athalia* closely, which I understood to be a common insect in this locality. On arriving at the summit of the hill, I found that the grass in the meadows had been recently cut, and consequently the number of *athalia* on the wing was

exceedingly small. In the small grassy glades I found the species in greater numbers, but the condition of the majority of the specimens left much to be desired. However, I was able, after working some time, to muster a fairly interesting series. At privet blossom was netted a single *Klugia spini*, a species I had not previously met with, and a further addition was made to the list in the capture of one or two freshly-emerged *Limenitis sibylla*, which were frequenting the woodland paths. *Hipparchia alcyone* and typical *Argynnis niobe* were taken at Charpigny, and in the grassy glades *Brenthis dia* occurred sparingly. Mr. Fison had written to say that at Charpigny a few days previously, he had seen *Limenitis populi* flying about the tall trees in the sunshine; but, although I kept a careful watch, I failed to see the species on this date, a fact due, perhaps, to the day not being sufficiently bright.

The next day, June 24th, was spent on the well-known Sépey Road. This particular locality bears the reputation of being a splendid collecting ground for the Theclids, which frequent the blossoms of the privet bushes growing by the roadside. Although the day was not ideal, it was not altogether unfavourable, for the sunny intervals were of fairly long duration. The privet though was in ideal condition, for the bushes, which are found so commonly alongside the road, were heavily laden with blossom; but much to my disappointment, the insects attracted were surprisingly few, both in numbers and species. *Nordmannia ilicis* was the sole representative of the family, the only other species noted being *Pieris brassicae* and *Aporia crataegi*, with occasional Anthrocerids. Afterwards I turned my attention to the grassy slopes on the upperside of the road, but at no particular place along the route did I find insects in any large numbers. *Parnassius apollo* was not uncommon, nor were *Hesperia carthami* and *Aricia astrarche*. A single *Hirsutina damon* was taken, and other species noted included *Adopaea flava*, *Hesperia alveus*, *Lycaena arion*, *Brenthis dia*, *B. euphrosyne*, *Melitaea athalia*, *M. phoebe*, *Argynnis adippe*, *A. aglaia*, and *Leptosis sinapis*. A single fresh *Polygonia c-album* was taken, and one or two *Sesia stellatarum* were noticed hovering over flowers.

The last day of my stay was reserved for a visit to Eclépens, where so many good species and interesting forms are found; but it turned out to be quite the most unproductive expedition I had made. The day, it must be confessed, was utterly impossible, with not a single gleam of sunshine, and a very cold blustering wind. I beat and searched the undergrowth with a persistence that deserved some measure of reward, but the total result of all my labour was a solitary specimen of *Coenonympha arcania*—a species I had not previously met with.

This was a somewhat inglorious ending to a holiday, which, despite much unfavourable weather, had proved most thoroughly enjoyable. For, quite apart from the special interest Switzerland has to the lepidopterist in the richness and variety of its butterfly fauna, there are, as everyone knows, those glorious natural beauties of the country, which, in their scientific and æsthetic aspects, make so powerful an appeal to the wider perceptions of the true naturalist.

In concluding I must confess my great indebtedness to Mr. Wheeler for whatever success that attended my collecting efforts. His varied experience of Swiss collecting proved of immense value in indicating



the most productive routes and localities; and I know how meagre the results would have been without his kind and valuable assistance. To Mr. Tutt I am also indebted for much kind help and valuable suggestions.

The total list of the 106 species seen and captured is as follows:—

*Erynnis lavaterae*, *E. alceae*, *Hesperia carthami*, *H. alvens*, *H. serratulae*, *H. malvae*, *Powellia sao*, *Nisoniades tages*, *Angiades sylvanus*, *Adopaea lineola*, *A. flava*, *Cyclopides palaemon*, *Heodes virgaureae*, *Chrysophanus hippothoe*, *Loweia alciphron* var. *gordius*, *L. dorilis*, *L. amphidamas*, *Rumicia phlaeas*, *Lycaena alcon*, *L. arion*, *Glaucopsyche iolas*, *Cupido minimus*, *C. osiris* (*sebrus*), *Cyaniris semiargus*, *Glaucopsyche cyllarus* *Polyommatus amanda*, *P. hylas*, *P. escheri*, *P. icarus*, *Agriades thetis*, *Aricia astrarche*, *A. eumedon*, *Hirsutina damon*, *Scolitantides baton*, *S. orion*, *Plebeius zephyrus* var. *lycidas*, *P. argus* (*aegon*), *P. argyrognomon*, *Everes alcetas*, *Celastrina argiolus*, *Callophrys rubi*, *Nordmannia ilicis*, *Klugia spini*, *Nemeobius lucina*, *Iphiclides podalirius*, *Papilio machaon*, *Par-nassius apollo*, *P. mnemosyne*, *Aporia crataegi*, *Pieris brassicae*, *P. rapae*, *P. napi* and var. *bryoniae*, *Pontia daplidice*, *Anthocharis simpsonia* and var. *flavidior*, *Euchloë cardamines*, *Leptosis sinapis*, *Colias phicomone*, *C. hyale*, *C. edusa*, *Gonepteryx rhamni*, *Dryas paphia*, *Argynnis aglaia*, *A. adippe*, *A. niobe* and var. *eris*, *Issoria lathonia*, *Brenthis euphrosyne*, *B. daphne*, *B. ino*, *B. dia*, *Melitaea aurinia*, *M. phoebe*, *M. cinxia*, *M. didyma*, *M. deione* var. *berisalensis*, *M. aurelia*, *M. parthenie*, *M. athalia*, *M. dictynna*, *Pyrameis cardui*, *P. atalanta*, *Eucanessa antiopa*, *Vanessa io*, *Aglais urticae*, *Eugonia polychloros*, *Polygonia c-album*, *Limenitis camilla*, *L. sibylla*, *Pararge maera*, *P. hiera*, *P. megaera*, *P. egeria* var. *egerides*, *P. achine*, *Hipparchia alcyone*, *H. cordula*, *H. semele*, *Epinephele iavira*, *Enodia hyperanthus*, *Coenonympha iphis*, *C. arcania*, *C. satyrion*, *C. pamphilus*, *Erebia ceto*, *E. medusa*, *E. stygne*, *E. evias* and *Melanargia galathea*.

## COLEOPTERA.

*PHILONTHUS INTERMEDIUS*, BOISD., var. *DONISTHORPEI*, A NEW FORM.

—In sculpture, size, and coloration of head, thorax, and hind-body, similar to the "type-form." In the colour of the elytra, which are of a bright vivid red (with a faint metallic-green reflection), the specimen departs in a striking manner from the normal. The contrast between the bronze-green thorax, and the clear red elytra, makes this form a most beautiful and individual one. I proposed for it the above-mentioned name in honour of my friend, Mr. H. St. J. K. Donisthorpe. The type specimen was captured at Ditchling, Sussex, on August 30th of this year. It was obtained, in company with very many normal *P. intermedius*, by sifting the refuse-heaps in a farmyard.—HERWARD DOLLMAN, F.E.S.

FURTHER NOTES ON THE GENUS *STENUS*.—In the May number of this journal (p. 116), I gave some details of captures of species of the genus *Stenus* in Scotland during March. Since then I have paid special attention to the genus wherever I have collected. At Wicken Fen, April 14th-16th, I took *palustris*, Er., *lustrator*, Er., *bimaculatus*, Gyll., and *brunnipes*, Steph., in numbers; and, more sparingly, *pallipes*, Gr., *latifrons*, Er., *carbonarius*, Gyll., *flavipes*, Steph., *fuscipes*, Gr., *nitens*, Steph., *nigritulus*, Gyll., *paganus*, Er.; all these were found by shaking out reeds and sedge over a sheet of paper. At Stalham (Norfolk), on April 19th, I secured by the same method of working,

*fuscipes*, Gr., *latifrons*, Er., *proditor*, Er., *nitens*, Steph., *pallitarsis*, Steph., and *palustris*, Er. At Newton Moss, near Penrith, on June 5th, by sweeping, I captured *fuscipes*, Gr., and *argus*, Gr. During my stay at Netby Bridge, Inverness-shire, in July and August, I found *Steni* very scarce; I only met with *geniculatus*, Gr., under some damp straw on a grouse moor, *bifoveolatus*, Gyll., *tarsalis*, Ljun., and *declaratus*, Er. In September I was again at Stalham and Wicken Fen; at the former place, on the 21st, I secured *proditor*, Er., *nitens*, Steph., *carbonarius*, Gyll., and *latifrons*, Er., all shaken out of marsh hay; and, on the 22nd, at Catfield, a village a few miles away from Stalham, also out of stacks of freshly cut marsh hay, I secured *rafellus*, Er., *argus*, Gr., *nitens*, Steph., *declaratus*, Er., and *carbonarius*, Gyll.; this latter insect must have been present in hundreds, though I only took a few, thinking at the time it was *bupthalmus*, Gr. While working the water net in a small pond near Stalham three specimens of *fornicatus*, Steph., were captured. At Wicken Fen, strangely enough, on September 23rd-25th, hardly a single *Stenus* was seen, and I only noted *lustrator*, Er., and *palustris*, Er.—(Prof.) T. HUDSON-BEARE, B.Sc., F.E.S., 10, Regent Terrace, Edinburgh. November 15th, 1910.

INTERESTING COLEOPTERA AT HANWELL.—On July 17th of this year, I journeyed to Hanwell in quest of *Philonthus thermarum*, Aub. At not a great distance from the famous water-beetling pond in the Brent Valley meadows, I sighted (or scented!) a likely looking dung heap; from this heap I secured several useful species, inclusive of my principal quarry, *P. thermarum*. The best captures were:—*Aleochara crassiuscula*,\* Sahlb., very scarce indeed, some six examples in all being taken. *Leptacinus parumpunctatus*, Gyll., was not uncommon, and is now (October) on in profusion. *Leptacinus batychnus*, Gyll., a scarce beetle here—not nearly as common as *parumpunctatus*. Some specimens of the latter look superficially like *batychnus*, being small, with the apical elytral angles somewhat broadly lighter, and having one more than the regulation series of five thoracic punctures. Such specimens, however, may easily be differentiated by the much coarser punctuation of the head and thorax, and the more linear form of the latter. Of *Medon obsoletus*, Nor., I took one, much diligent work failing to produce further examples. *Cilea* and *Lithocharis* were, of course, both present in abundance; in reference to the latter, it is of interest to note that *Labia minor* was in profusion. *Philonthus albipes*,\* Gr., was perhaps the most frequent of the genus, though it need hardly be stated that *ventralis* and *discoideus*, Gr., were far from being rarities. The only *Hister* was *bimaculatus*, L., the paucity of species in the genus was, however, compensated for by the abundance in which this beautiful little *Hister* was present. Subsequent visits during July with my friends, Mr. H. St. J. K. Donisthorpe and Dr. G. W. Nicholson, resulted, in addition to the recapture of most of the above-mentioned species, in one interesting new form, *Alphitophagus bifasciatus*,\* Say., one specimen of which fell to the lot of Dr. Nicholson. Another excursion a few days ago (October 25th) had its reward in a nice series of the rare little Clavicorn, *Myrmecoxenus vaporariorum*,\* Guér., and *Cereyon nigriceps*, Marsh., in the greatest profusion and variety.—HEREWARD L. DOLLMAN, F.E.S., Hove House, Bedford Park.

\* Not recorded in Canon Fowlers's *Coleoptera of the British Islands from the Ealing district*.



COLEOPTERA FROM DITCHLING, SUSSEX, DURING AUGUST AND SEPTEMBER, 1910.—During my stay at Ditchling, this summer, the execrable weather that characterised August quite forbade the use of the sweeping net except in a most desultory way. I was forced to turn my attention principally to working around ponds, at hay-stacks, and in cows-beds. From some neighbouring cow-sheds and the adjacent farmyard I obtained several nice species. *Quedius fulgidus*,\* F., was an interesting addition to my "local list," the species occurring in considerable numbers. This *Quedius* was very partial to the sheds themselves, only two or three being noticed among the refuse without the sheds. *Heterothops praevia*,\* Er., and *H. dissimilis*, Gr., were both common, especially the latter. *Mycetaea hirta*, Marsh., occasional specimens only. *Aglenus brunneus*,\* Gyll., was very common in one part of a cow-shed, but did not turn up elsewhere. *Hister meydairus*,\* Hoff., I found both in sheds and among the dung heaps outside; some fifteen specimens of this rare *Hister* were "bagged." *Niptus crenatus*,\* F., one only, among dry straw. By sifting the refuse heaps in the yard, *Stenus crassus*, Steph., and *S. melanopus*, Marsh., were met with in the utmost profusion, *crassus* in particular being extraordinarily abundant. *Cercyon nigriceps*, Marsh., and *C. terminatus*, Marsh., were secured in the same manner, as were *Leptacinus parumpunctatus*,\* Gyll., and *L. batychrus*, Gyll., both of which species were scarce however. *Stilicus subtilis*, Er., put in an occasional appearance here, as did *Cartodere ruficollis*, Marsh., *Hister unicolor*, L., *H. bimaculatus*, L., and very many common species. On August 24th, I discovered one or two starling's nests situated in some old birch trees near Ditchling village. With the aid of a ladder these were duly transferred to my sweep net, and were found to contain: *Microglossa pulla*, Gyll., *Philonthus fuscus*,\* Gr. (some two dozen examples), *Trox scaber*, L., in large numbers, and various common species. By working round the margins of three or four small ponds I made some additions to my knowledge of the local coleopterous fauna. *Limnebius nitidus*, Marsh., was found sparingly by immersing the pond weed. *Oethebius rufimarginatus*, Steph., two specimens of this very local beetle were fished out of a pond—the usually common *bicolor* has not yet been noticed around Ditchling. *Cercyon haemorrhous*, Gyll., was very common among moss and on mud round the ponds. One specimen, apparently mature, is of an uniform reddish-testaceous colour. *Ocyusa maura*,\* Er., of this species a short series were shaken from the thick pond moss. *Falagria sulcatula*, Gr., found in company with the *Ocyusa*, also scarce. *Evaethetus ruficapillus*,\* Lac., not uncommon; *Stenus incrassatus*, Er., one specimen only; *S. pusillus*, Er., common; *S. pallipes*, Gr., very scarce; *S. binotatus*, Ljun., found in numbers by pulling up the reed roots and shaking them over a sheet. In this way *Copelatus agilis*, F., and *Agabus paludosus*, F., were freely secured. *Copelatus* was in great numbers, there often being over a dozen shaken from one root. *S. picipennis*,\* Er., not rare in thick moss; *S. fornicatus*,\* Steph., one example only; *Parnus auriculatus*,\* Geoffr., common in thick wet moss. I owe to Mr. Donisthorpe's keen eye the true identity of this species, as I had previously considered them the common species *P. luridus*; *Parnus ernesti*, Gozis., was found once or twice only. *Ceuthorhynchidius melanarius*, Steph., and *Gymnetron beccabunage*, L., were both in numbers on their respective pabula. By shaking moss growing

on the north face of the Downs I came across:—*Ilyobates propinquus*, Aub., two specimens; the first of these was in the company of a considerable number of some *Myrmica*, and several *Lasius flavus*. There were also two *Drusilla* on the sheet. *Stenus erichsoni*,\* Rye, was very common in this hill moss—even more so than the ubiquitous *brunnipes*. *Trychonyx märkeli*, Aub., one from moss, apparently not attended by ants, [18. ix.], one under a large stone in a nest of *Lasius flavus*, [28. vii.]; and a third specimen on a stone that covered a deserted ant's nest, [26. vii.] *Hyperaspis reppensis*, Hbst., not uncommon, although very local, among thick hill moss. *Syncalypta spinosa*, Ross., common *Tychius polylineatus*, Germ., a few specimens of this very rare beetle were shaken from moss around *Lotus* and *Trifolium*. *Orthochaetes setiger*, Beck., widely distributed in moss for miles across the downs, though nearly always turning up singly. Stone-turning on the hills, usually very unproductive, this year yielded at least one "find," in a specimen of *Neuraphes carinatus*,\* Muls. The beetle was under a large flint (out of all proportion to its size!) at the foot of Ditchling Beacon, and was captured on July 28th. Another nice species found on the same day by stone-turning was *Homalota scapularis*, Sahl. One or two *Licinus depressus*, Pk., were the only other beetles worthy of note. From moss in the lanes, sterile enough in summer, an occasional species of interest was gleaned. As, for example, *Eraesthetus scaber*, Gr. (which was common); *Bythinus curtisi*, Den., scarce; *Stenus exiguus*, Er., *fuscipes*,\* Gr., and *decoloratus*, Er. Considerable attention given to the roadside grass heaps produced, among many "commoners," *Conosoma immaculatum*, Steph., fairly common; *Philonthus albipes*, Gr., common; *P. umbratilis*, Gr., scarce, and *P. debilis*, Gr., scarce; *Calyptomerus dubius*, Marsh., two or three, and *Neuraphes sparshalli*,\* Den., a nice series. Among beech leaves, in a small copse on the Beacon, I took:—*Habrocerus capillari-cornis*, Gr., in abundance; *Quedius oblitteratus*, Er., not uncommon, and *Choleva willini*, Spence, in numbers; *Phloeocharis subtilissima*, Man., was secured out of an old beech stump, and *Prognatha quadricornis*,\* Kirb., by beating elder. General hedge-beating resulted in a nice series of *Mordellistana neuwaldeggiana*,\* Pz., several *Clinocara tetratoma*, Th., and a short series of *Choragus sheppardi*, Kirb. The little sweeping I did produced extraordinarily little, and beyond *Hydnobius strigosus*, Schm., *Scydmaenus scutellaris*, Müll. (several), and the two milfoil species—*Cassida sanguinolenta*, F., and *Centhorrhynchus triangulum*, Boh., was wasted energy. A day at Lewes with Mr. Donisthorpe rewarded us with *Galerucella pusilla*, Weise, *Psylliodes picina*, Marsh., *Longitarsus agilis*, Rye, and *L. flavicornis*, Steph., the latter swarming on *Convulvulus sepium*. Among some fungus-covered bread, left as a bait in a bird trap, *Oxytelus insecatus*, Gr., was found in small numbers. Careful sifting of a large goose's nest, found in one of the farm sheds, produced a considerable number of beetles, though not many species. The most prolific was *Cryptophagus bicolor*, Stm., which was remarkable both for its abundance and variety. *Microglossa suturalis*, Sahl., made an excellent second in point of numbers. A nice series of *Euconus jimetarius*, Chaud., was the most welcome inmate of this nest. It is a very different species from the Wicken Fen *hirticollis*, which I also took in the Fens in the early part of the year. Species with asterisk not recorded by me before from



Ditchling, or mentioned as occurring in Sussex in Canon Fowler's *Coleoptera of the British Islands*.—HEREWARD L. DOLLMAN.

BEETLE "JOTTINGS" OF 1910.—*Dromius agilis*,\* F., some dozen specimens from under the bark of ash, Chingford, January 9th; *Calosoma inquisitor*,\* L., taken on wing near Highbeech, Epping, on June 3rd; *Microglossa gentilis*,\* Märk., one specimen on wing at Chingford on June 3rd; *Hapalaraea pygmaea*\*, Pk., among wood-mould in hollow beech, Epping Forest, October 10th; *Quedius maurus*,\* Sahlb., under beech bark at Highbeech, October 10th; *Actobius prolixus*, Er., on margins of large pond near Hanwell, one specimen captured on February 19th; *Choleva agilis*,\* Ill., rarely in reed débris around Hanwell pond during February; *Bradycellus placidus*,\* Gyll., rare at Hanwell, always by shaking the reed heaps; *Bembidium clarki*,\* Daws., common at Hanwell pond; *Hygromoma dimidiata*,\* Grav., found in numbers by sifting reed refuse at Hanwell in February; *Deinopsis erosa*,\* Steph., one or two specimens from refuse round the pond, Hanwell; *Tachyporus pallidus*,\* Sharp, very common both at Hanwell and Richmond Park in February; *Ptinus sexpunctatus*,\* Pz., two specimens from under oak bark in Richmond Park on March 30th; *Prognatha quadricornis*,\* Kirb., very common, with many of its larvæ, under elder bark in Richmond in March; *Homalium caesum* var. *tricolor*, Rey, two or three specimens from Richmond Park out of fungi; *Mycetoporus lucidus*,\* Er., one by sifting dead leaves in Richmond Park on October 19th; *M. punctus*,\* Gyll., a series taken in early spring by shaking grass roots in Richmond Park; *Encephalus complicans*,\* Westw., a few specimens by sifting vegetable refuse at Basingstoke; *Antherophagus silaceus*, Hbst., one from off a flowering umbel at Darenth Wood on July 19th; *Malachius marginellus*,\* Ol., one specimen swept on June 19th in the lane leading from the Robin Hood Gate of Richmond Park to Wimbledon Common; *Gnorimus nobilis*, L., one or two from old apple tree at Bedford Park, London; *Philonthus albipes*,\* Grav., common in horse-dung at Bedford Park, London; *Platyderus ruficollis*, Marsh., five-six under stones at Bedford Park; *Cassida vibex*,\* F., one from moss on Hook Common, near Basingstoke, April 20th; *Stenus solutus*,\* Er., and *S. pallipes*, Grav., from reed refuse at Hanwell Pond during April; *Xylophilus populneus*,\* F., one ♀ on wing in late May near Wicken Fen; *Cartodere elongata*,\* from fungus on willow in March, Bedford Park.—HEREWARD L. DOLLMAN.

## SCIENTIFIC NOTES AND OBSERVATIONS.

PUPAL ANTENNÆ OF *DEPRESSARIA APPLANA*.—I was comparing a few pupæ of the *Depressariids* the other day, and was interested in noticing what perhaps I may call the progression of the antennæ. The pupa belongs to the obtect division, and the antennæ lie beside the costa of the forewings. In *Depressaria heracliana* the antennæ scarcely reach to the apex of the forewing, while in *D. atomella* (bred from *Genista tinctoria*) and in *D. putridella* the antennæ just pass round the apex. In *D. applana*, which has very long antennæ, these organs are carried round the apex and some distance up the other side of the wing. In one pupa of this species the apices of the antennæ touched the hind-wings, where they appear protruding from beneath the forewings, but

in other specimens they did not reach up so far. It would be of interest to know how, with regard to this feature, the pupa of this species compares with that of *D. ciliella*.—ALFRED SICH, F.E.S., Corney House, Chiswick. November 26th, 1910.

## VARIATION.

SUGGESTED DIFFERENCE IN TINT BETWEEN THE SUMMER AND AUTUMN EMERGING *AGLAIS URTICAE*.—I should be greatly obliged if your readers would please say whether they notice any marked distinction in the ground colour of *Aglais urticae* in different broods. I have specimens of a brood from Kent, bred out in July, which are quite normal, but a brood from Cambridge (larvæ taken late in September), and bred out in October, were, with one exception, of a much paler ground colour, inclining to yellow.—A. SPERRING, 8, Eastcombe Avenue, Charlton, Kent. November 23rd, 1910.



LOCAL ABERRATION OF *ABRAXAS GROSSULARIATA*.—In the September number, 1909, p. 197, you illustrated a wild specimen of an aberration of *Abraxas grossulariata*, taken at Charlton, Kent. I now send you illustrations of two more specimens bred from wild larvæ taken from the same hedge. Evidently the aberration is a fixed one in this locality. Considerable numbers of specimens, also bred from larvæ taken from the same hedge (a short strip of some eight or nine feet of *Euonymus japonica*), tend in a less or greater degree to variation in the same direction.—ID.

## NOTES ON COLLECTING, Etc.

EXCHANGE CORRESPONDENCE WANTED WITH BRITISH LEPIDOPTERISTS.—Some three years ago we founded here a society of young lepidopterists,



the members of which now wish to get into touch with lepidopterists of other countries for the purpose of exchanging specimens, and of comparing observations, and I should be greatly obliged if, through the medium of your journal, you could introduce us to some British entomologists to whom we shall be pleased to send a list of the lepidoptera and insects of other orders, which we have for exchange.—RAYMOND DE SAUSSURE, Geneva. November 15th, 1910.

PROPOSED NEW WORK ON "BRITISH GALLS."—I am preparing for early publication a text-book of "British Galls." Will any of your readers in any way kindly help by advising me where to obtain specimens of any lepidopterous galls for my artist to sketch? I particularly want to see the "galls" caused by *Laverna decorella* and *Asychna aeratella*. Every care would be taken of the specimens, and they would be returned as soon as possible.—E. W. SWANTON, Brockton, Haslemere. November 11th, 1910.

A CURIOUS CASE OF POSITIVE PHOTOTROPISM.—On September 9th, 1910, at Holmesley, in the New Forest, I was working a light trap, and to my intense surprise at 9.30 in the evening, on a dark night, a *Bithys quercus* put in an appearance. I have seen *Vanessa atalanta* and *Aglaia urticae* flying at lamps in the street, and have had *Pieris napi* come to light early in the evening, but it had been dark for about 2½ hours before *B. quercus* came. Sunset was 6.27.—W. PARKINSON CURTIS, F.E.S., Aysgarth, Poole. December 8th, 1910.—[For a similar case see *A Natural History of the British Lepidoptera*, vol. ix., p. 265.—ED.]

POLYGONIA C-ALBUM IN THE NEW FOREST.—On July 18th, 1909, Mr. E. Harker Curtis captured the above insect sunning itself on an oak bough. I can offer no explanation for its appearance, except the hypothesis that some local breeder had allowed larvæ to escape or put pupæ down. According to my collecting experience of about 15 years *P. c-album* is certainly not a Forest insect.—IBID.

GASTROPACHA ILICIFOLIA NOT IN DEVONSHIRE.—With regard to my record of this species in Devonshire on September 2nd last (*antè*, p. 240), I find I am wrong in calling the specimen *G. ilicifolia*. It is one of the Prominentes, which I am not sure at present, although I fancy it is *Ptilophora plumigera*.—W. J. MONK, Tavistock. December 2nd, 1910.

## CURRENT NOTES.

The Rev. F. D. Morice records (*Ent. Mo. Mag.*) *Crabro* (*Coelocrabro inermis*, Thomson, as a British species from specimens captured at Clandon, August, 1900, and at Woodham, June, 1902, both ♀s; also *Crabro* (*Solenius*) *larvatus*, Wasm., from specimens taken in the New Forest, June, 1900, and in the Woking district, June and July, 1899-1902; he also distinguished *Crabro* (*Clytochrysus*) *planifrons*, Thoms., as British on the strength of a single ♀ taken at Hillmorton, in August, 1894.

Mr. J. Collins records the capture of a pair of *Conops* (*Brachyglossum*) *signata*, Wied., at Tubney, Berks, on September 11th last. Mr. J. Collins gives some details of this latest addition to our list.

Dr. D. Sharp adds *Microdon eggeri*, Mik., to the British list on the strength of a single specimen captured at Rannoch early in June last, he also adds *Ernoneura argus*, Zett., to the British list from a specimen

captured by himself at Loch Garten, near Nethy Bridge, and another captured by Colonel Yerbury in the Thurso district.

Mr. G. F. Mathew records the capture of a specimen of *Leucania loreyi* in the neighbourhood of Queenstown, on the night of October 6th last, it was beaten from ivy growing on a garden wall about 30 yards from the sea, by Commander Gwatkin Williams, R.N.

We are in receipt of the sixth part of the *Noctuelles et Gdomètres d'Europe*, by Monsieur I. Culot, the plates are of the same finished order as those of the preceding parts, every figure being drawn and coloured with marvellous fidelity, this part deals with the Agrotids.

## SOCIETIES.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY.—October 27th, 1910.—SWISS LEPIDOPTERA.—Mr. Ashdown exhibited examples of the various species of lepidoptera met with by him during a few weeks spent in Switzerland in July last, including *Apatura iris*, *Issoria lathonia*, *Melitaea phoebe*, *Limenitis camilla*, *Erebia lappona*, *Colias phicomone*, *Cupido osiris* (sebrus), etc. LEPIDOPTERA.—Mr. Newman, a living larva of *Polygonia c-album*, and a long series of ♀s of *Agriades thetis* (bellargus) from Folkestone. ABERRATIONS OF LEPIDOPTERA.—Mr. South, series of (1) *Coremia unidentaria* bred from ova, and read notes on the two main types produced; (2) *Acidalia aversata* bred from ova, and gave an analysis of the banded and plain forms produced; (3) *Boarmia gemmaria* bred from ova of var. *perfumaria*, the resultant imagines being all of the varietal form; (4) *B. abietaria*, specimens bred from New Forest larvæ; (5) *Pionea* (*Scopula*) *lutealis*, a series from Durham, white, strongly marked, larger than southern examples; and (6) light forms of *Larentia didymata* from Weardale. TERATOLOGICAL SPECIMENS.—Dr. Chapman, a large number of teratological specimens lent him by Mr. Tutt, Mr. Pickett, Dr. Hodgson, and others, to illustrate the interesting paper he read, entitled, "Notes on Teratological Specimens." November 10th, 1910.—AGRIADES CORIDON.—Dr. Hodgson exhibited selected examples of *Agriades coridon*, mainly ♀s, to show the prevalent slightly blue-scaled form from Dover and Clandon in 1906 and 1904 respectively, and from Sussex, Surrey, and Herts in 1910. VANESSA IO.—Mr. Platt Barrett, bred specimens of *Vanessa io* of a curious greasy-looking appearance, from mal-development of the scales. BRED LITHOSIA CANIOLA.—Mr. R. Adkin, a bred series of *Lithosia caniola* from Devonshire, and read notes on the larval habits. They fed mainly on lichen and lettuce. ABERRATIONS OF BUTTERFLIES.—Mr. Newman, a curious specimen of "blue," which it was suggested might be a natural hybrid between *A. coridon* and *P. icarus* or *A. thetis* and *P. icarus*, and also a ♂ *Polygonia c-album* with yellow ground, of which ten others have been reared. LIMENITIS POPULI.—Mr. Sich, *Limenitis populi* taken by Mr. E. Sich in Austria. TERATOLOGICAL LEPIDOPTERA.—Mr. Turner, a teratological specimen of *Danaüs limniace* with a long indentation in the dwarfed left forewing. Mr. Buxton, a box of teratological specimens, including a number of species with the left hindwing dwarfed or missing. ACIDALIA RUSTICATA.—Mr. Barnett, a series of *Acidalia rusticata* from Erith. Mr. R. Adkin read the REPORT of the CONFERENCE of DELEGATES of the CORRESPONDING SOCIETIES of the BRITISH ASSOCIATION,



ENTOMOLOGICAL SOCIETY OF LONDON.—November 16th, 1910.—  
 NOMINATION OF OFFICERS AND COUNCIL FOR 1911.—Mr. H. Rowland-Brown, one of the Secretaries, announced that the Council had nominated the following Fellows to act as officers for 1911: President, Mr. J. W. Tutt; Treasurer, Mr. A. H. Jones; Secretaries, Commander J. J. Walker, M.A., R.N., F.L.S., and the Rev. G. Wheeler, M.A.; Librarian, Mr. G. C. Champion, F.Z.S., A.L.S.; and as other members of the Council, Mr. R. Adkin, Professor T. Hudson Beare, B.Sc., F.R.S.E.; Mr. G. T. Bethune-Baker, F.Z.S.; Dr. M. Burr, D.Sc., F.L.S., F.Z.S.; Mr. H. St. J. Donisthorpe, F.Z.S.; Mr. J. H. Durrant, Professor Selwyn Image, M.A.; Dr. K. Jordan, Ph.D.; Mr. A. Sich, Mr. J. R. le B. Tomlin, M.A., and Mr. H. J. Turner. APPOINTMENT OF AUDITORS.—The following Fellows were appointed to act as auditors of the Society's accounts for the current year: Mr. H. St. J. Donisthorpe, F.Z.S., Dr. T. A. Chapman, M.D., F.Z.S.; Mr. R. Wylie Lloyd, Mr. A. Sich, Mr. H. J. Turner, and Mr. C. O. Waterhouse.—DARWIN MEDAL.—The President having announced that the Royal Society were about to present the Darwin Medal to Mr. Roland Trimen, M.A., F.R.S., a Past-President of the Society, it was agreed unanimously to convey to the recipient the hearty congratulations of the Entomological Society of London. RARE PALEARCTIC MOTH.—The Hon. N. C. Rothschild brought for exhibition some examples of a rare Noctuid moth *Oxytrypia orbiculosa*, Esp., collected by himself and Miss Sarolta von Wertheimstein, at Puszta Peszer, in Hungary, during the first week of October of this year, where examples of both sexes were secured. The exhibitor remarked on the curious habits of the moth illustrated by photographs of one of the sandy spots in the wood it frequents, and recalled the adventurous history of its discovery and re-discovery in Hungary. FLEAS.—The Hon. N. C. Rothschild also exhibited examples of two species of flea, *Ctenocephalus canis* (dog-flea) and *Ctenocephalus felis* (cat-flea), and stated that, though still frequently considered to be identical, they were really quite distinct species. The exhibitor also remarked that the two had been united by Dr. Taschenberg under the name of *serraticeps*, a name which most certainly could not be retained. Under the microscope it was seen that whereas the head of the dog-flea was rounded, that of the cat-flea was long and flat. RARE BRITISH BEETLES.—Dr. G. Nicholson showed the example of *Lathrobium longipenne*, Faim., taken by him at Croydon, in May, 1910, of which a specimen was exhibited by Commander J. J. Walker at the last meeting of the Society. Professor T. Hudson Beare exhibited specimens of three species of beetles, all taken abundantly by him at Nethy Bridge, Invernesshire, during July and August 1910, viz.: (a) *Eriirhinus aethiops*, F.—This species occurred in great abundance in a mere handful of flood refuse on the banks of the River Spey. The only other record of its occurrence in numbers is that given by the Rev. W. F. Johnson from the North of Ireland; (b) *Criocephalus rusticus*.—This species was taken in numbers in the stumps of and in small standing Scots fir-trees in a portion of the pine-woods which surround the village, and which had been swept over by a forest fire some few years ago. There was no doubt that the larvæ had a preference for this burnt timber, as they were much more abundant in this area than in similar timber in adjacent parts of the woods; (c) *Zengophora turneri*, Pow.—The species was beaten in great

profusion from aspens growing near Loch An-Eilan. Many of the specimens were slightly immature, and as the species had been taken early in June by Mr. Donisthorpe, near Braemar, there is little doubt that this insect is double brooded. **EXPERIMENTS WITH ANTS' NESTS.**—Mr. W. C. Crawley exhibited a colony of the ant *Lasius niger* which had accepted as queen a ♀ of *Lasius umbratus* in 1908. Up to this autumn the only ants which had come to maturity in the nest were pure *Lasius niger*, thus confirming Reichenbach's experiments (*Biologische Centralblatt*, July 15th, 1902, p. 461), that *Lasius niger* ♂s are able to produce ♂s parthenogenetically. It was hitherto supposed that ♂s of ants could only lay eggs that produced ♂s, on the analogy of bees. A similar colony dating from 1896 gave similar results (*Science Gossip*, May 1900). In connection with Mr. Crawley's exhibit Mr. H. St. J. Donisthorpe exhibited ♂s, winged and wingless ♀s and ♂s of *Lasius niger* and *L. umbratus* for comparison. He remarked that *umbratus* was a scarce but widely distributed ant of considerable interest. Mr. Barnes has recorded nine wingless ♀s in a nest of *Formica sanguinea*, at Wellington College, and he himself had found ♀s in some numbers on several occasions with the same ant at Woking. Wasmann has recorded *umbratus* with *niger*. It is probable that *L. umbratus* ♀ is unable to found her own nests, and is a temporary social parasite on *niger*. Mr. Crawley's observations and experiments go to confirm this. Mr. Donisthorpe also exhibited ♂s, winged and wingless ♀s, and ♂s of *Lasius fuliginosus*, and pointed out that it was now proved that the ♀s of this ant often founded their colonies with *umbratus*. He quoted Wasmann, Forel, Eney, Crawley, and his own observations, and stated that Crawley and he intended to make experiments with these ants next year. In connection with the ♀s bred in Mr. Crawley's nest from parthenogenetic eggs laid by the *niger* ♂s, he added that Reichenbach had bred 300 ♂s and several dozen ♂s from eggs laid by twelve *niger* ♂s, from 1899 to 1902. Mrs. Comstock has also reared ♂s in a ♀less nest of *L. niger* var. *americanus*, in 1902, in America. These facts confute Dzierzon's hypothesis, which has been tacitly extended to ants, that parthenogenetic eggs laid by the honey-bee ♂s only produce ♂s. This has never been properly demonstrated. Finally, he remarked that it was a pity that ♀ ants had been treated, and expected to behave, like ♀ bees, which was not the case, and it had no doubt retarded their proper study.

**CLOSE RESEMBLANCE OF BUTTERFLIES FROM SOUTH AMERICA.**—Mr. W. J. Kaye exhibited specimens of *Eueides parana* (Heliconidae), *Actinote thalia* (Acraeidae), and *Dismorphia actinote* from S. Brazil. Comment was made as to the very close resemblance between the first two. The resemblance was greatest on the underside, but the upperside also showed considerable convergence of colouring. The specimen of *E. parana* exhibited had been caught and paped by Mr. Kaye as an example of the common *Actinote thalia*. The specimen of *Dismorphia actinote* caught on the Corcovado at Rio de Janeiro, was shown principally as a mimetic species, for which a sharp look-out was kept, while the much more convergent Heliconidae had been passed over, because unsuspected. The *Dismorphia*, while only a partial approach to the *Actinote* on the upperside, was extremely close on the underside, with the hindwing brought well over the forewing in an attitude of rest.

**ABERRANT LEPIDOPTERA.**—Mr. L. W. Newman exhibited



examples of *Abraxas grossulariata*, bred October, 1910, as a second brood, including two ab. *varleyata* ♂, one very finely rayed with white both on the fore- and hindwings, and one with the yellow band replaced by a very narrow pale lemon band the parents being typical forms, and grandparents *varleyata* ♂ × type ♀. He also showed an interesting Lycaenid supposed by some to be a natural hybrid between *Agriades thetis* (*bellargus*) ♂ × *Polyommatus icarus*, ♀, taken wild near Folkestone, on September 10th last; the underside showing both *thetis* and *icarus* characteristics, with those of *icarus* most pronounced, the upperside a fine *thetis* colour with white fringes, the shape of wings being also curious. Others supposed it to be merely *Agriades thetis* ab. *hyacinthus*, whilst Mr. G. M. Bethune-Baker having examined this exhibit gave it as his opinion that the supposed hybrid was merely an aberrant form of *Polyommatus icarus*. ITALIAN RHOPALOCERA.—Mr. Philip J. Barraud brought for exhibition a case containing several series of a large form of *Satyrus statilinus* from the Aurunci Mts., Southern-Central Italy; series of *Parnassius mnemosyne*, var. *fruhstorferi*, from Mt. Petrella, Aurunci Mts., 9,000ft.; series of *Colias edusa* and ab. *helice*, from Formia; a very small specimen of *Gonopteryx cleopatra*, measuring 37 mm., from Formia; and four examples of a large form of *Urbicula comma* from Southern-Central Italy.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY.—October 10th, 1910.—EXHIBITIONS.—This was the opening meeting of the session, and was devoted to exhibits of the season's work. LUPERINA GUENÉE, ETC.—Mr. T. Baxter, of St. Anne's, sent for exhibition a fine series of *Luperina guenéei* and its aberration, and also contributed a note, in which he pointed out that both forms were represented in a perfectly fresh condition, and that the view that the ab. *baxteri* would become the typical *guenéei* with age, must be abandoned. Mr. Baxter also sent an extraordinary ab. of *Abraxas grossulariata* which had the costal area of the left forewing typical, the remainder, about three-fourths of the wing, being black; the right forewing and the hindwings were typical; this fine asymmetrical specimen was captured in his garden at St. Anne's. Mr. H. R. Sweeting exhibited a long series of *Hydroecia crinanensis* captured this year near Londonderry; the variation appeared to be on exactly parallel lines with that of *H. nictitans*, the identity of the species was established by Mr. Pierce, who had an opportunity of examining the genitalia while the insects were still fresh. The same member further showed the following insects from Mold, N. Wales, viz., *Taenioctampa gothica*, including an asymmetrical example in which the U mark on the left forewing was only partly developed; *T. incerta*, *T. stabilis*, *Pachnobia rubricosa*, *Noctua festiva*, *N. brunnea*, *Aplecta prasina*, and *Boarmia repandata*, including an example of ab. *nigra*. Mr. F. W. Pierce showed *Abraxas grossulariata* a short series from Wallasey, in which the variation was less striking than usual. Mr. Wm. Mansbridge brought a series of the very black Knowsley race of *B. repandata* var. *nigra*, in which the submarginal pale line was almost absent; also short series of the same insect from Bude and Delamere Forest; *Boarmia gemmaria*, black form from N. Kent, pale forms from N. Devon, and var. *perfumaria* from the Cotswolds; a long series of *Aplecta nebulosa* var. *robsoni*, var. *thompsoni*, and grey forms from Delamere. Mr. Prince showed a fine series of *Oidaria reticulata* from

Windermere, and a box of *Oporabia filigrammaria*, varying from nearly white to very dark fuscous, from Derbyshire. Mr. R. Tate, Junr., exhibited the following, mostly in long series, viz.:—*Agrotis agathina*, rosy form from N. Wales; *Lithosia complana*, *Agrotis ripae*, *Epione apiciaria*, *Leucania putrescens*, *Boarmia abietaria*, *Ellopiia prosapiaria* from Pendine, S. Wales; *Arctia villica* and *Numeria pulveraria* from Abbot's Wood; *Taeniocampa munda* and *Pachnobia leucographa* from Lakeside, Windermere; *Tephrosia luridata* and *Cymatophora fluctuosa* from Wyre Forest; *Apatura iris*, bred from Hunts larvæ, and *Phigalia pedaria*, varying from pale to black, from Mansfield, Notts. Mr. B. H. Crabtree brought *Taeniocampa munda* and *T. gothica*, a series bred from Windermere; a series of *Characæa graminis* taken at light at Seascale; *Oporabia filigrammaria*, a varied series from Kinderscout, Derbyshire; *Biston hirtaria* from Aviemore larvæ which had been in pupa for two years; abs. of *Abraxas grossulariata* from Huddersfield larvæ. Mr. C. F. Johnson exhibited the following:—*Asteroscopus nubeculosa* and *Nyssia lapponaria* from two-year-old pupæ from Rannoch; *Pachnobia leucographa*, *P. rubricosa*, and *Taeniocampa munda* bred from Windermere; a long and varied series of *Oporabia filigrammaria* from N. Derbyshire; *Boarmia repandata* from N. Wales, N. Staffordshire, and Knowsley, Lanes., showing very varied forms; a specimen of *Abraxas grossulariata* var. *nigrosarsata* bred from Huddersfield. SPHINGIDÆ OF PERU.—The Rev. A. Miles Moss read a paper on the "Sphingidæ of Peru," and exhibited a magnificent collection of this group which he had made during the course of a three years' residence in Lima. The paper was further illustrated by a large number of beautiful water-colour drawings of the larvæ and foodplants of most of the species exhibited. The paper dealt in a most interesting way with the topography and climate of Peru as affecting the economy of the Sphingids and other lepidoptera, while passing allusions to the scenery and the difficulties of rearing the larvæ obtained on distant expeditions, were much appreciated by the members present.

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